

POWERSTAR Fuel Tanker Truck

User's Manual



POWERSTAR TRUCKS INDUSTRY CO., LIMITED

<http://www.isuzutruckscn.com/>

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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.

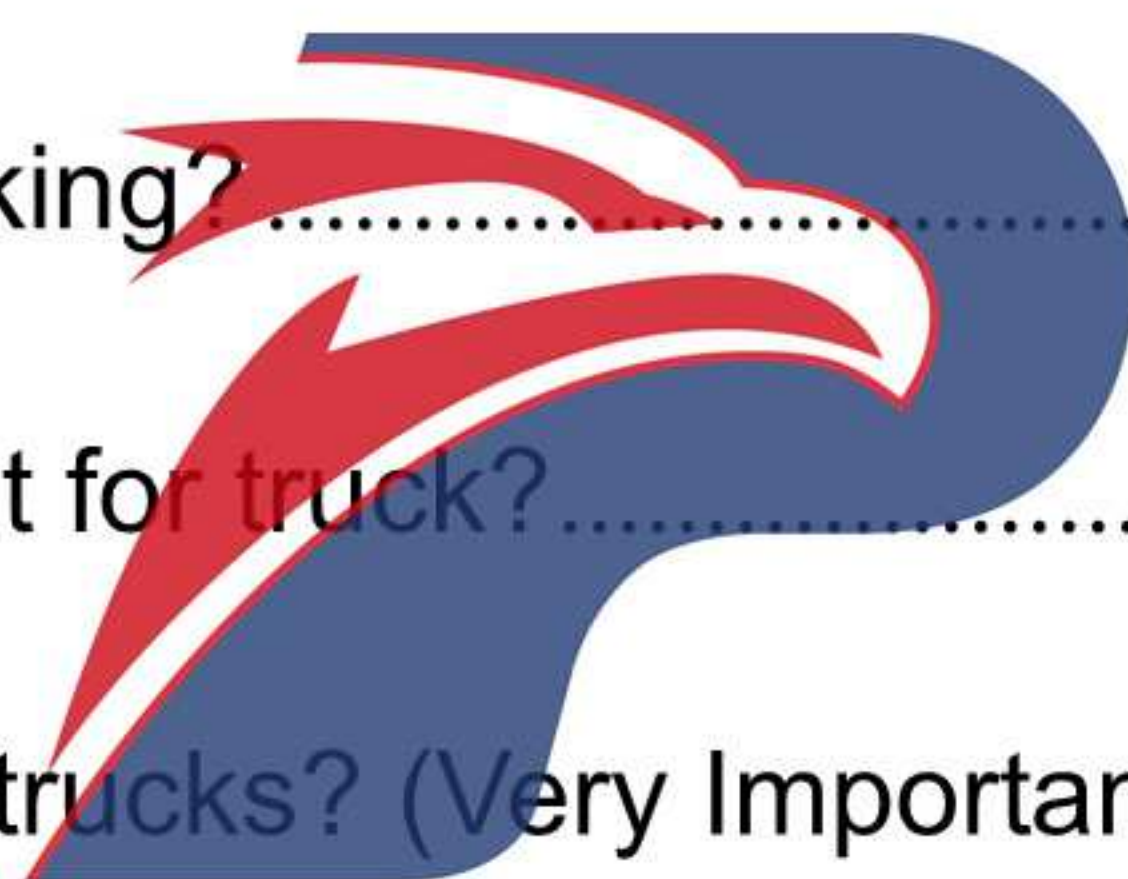


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----POWERSTAR TRUCKS

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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 4,000liters, double tank 2000+2000 liters, 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 4CBM and safety enough to transport & refueling oil based on customer requirement.

The ISUZU 4x4 Fuel Tanker Truck equipped with famous China brand combined fuel pump, with Pump A and Pump B, front climbing ladder, Euro standard Manhole, top & side & rear guard plate, safety fuel inlet & outlet valves, double refueling machine with 36m hose reel, 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 4CBM Fuel Tanker Truck)

Chapter 2, Main Technical Data

Basic parameter:

Items		2+2CBM ISUZU Fuel Tanker Truck
S I Z E	Outer Dimension (L×W×H) (mm)	6900*2230*2680
	Wheelbase (mm)	4175
Kerb Weight (kg)		5000
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.

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Water Tanker basic parameter list

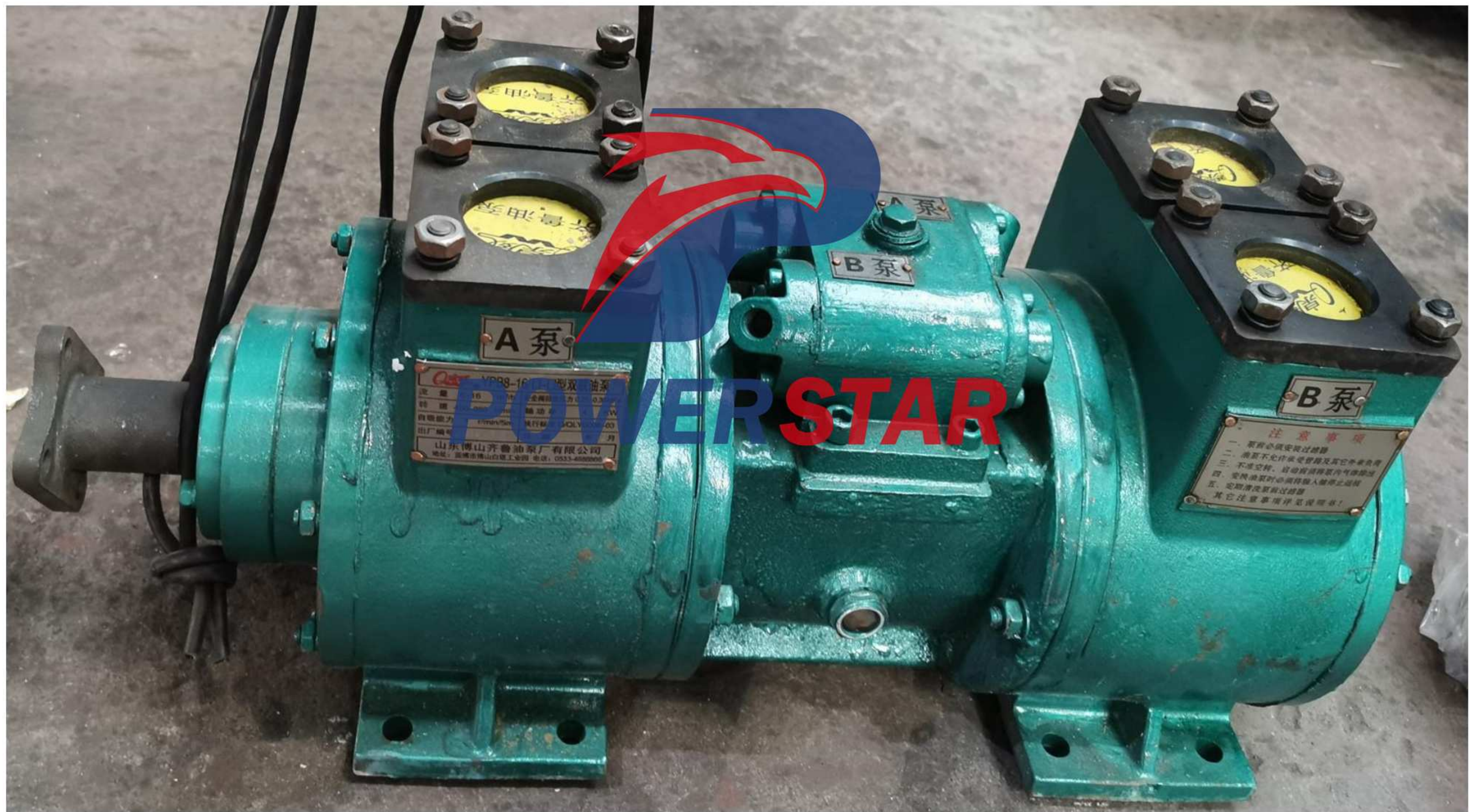
Items		Parameter	
Water tanker	Capacity (Liters)	2000+2000	
	Material	Standard Carbon Steel	
	Painting	Internal	With anti-rust painting
		External	White painting with Customized Logos
	Special Equipme nt	Refueling Machine	Double machine with 36m pipes and gun
		Valves	Equipped on side of tank
		Climbing Ladder	Equipped at rear of tank
Safety Guard		Equipped on top of tank	
Fuel Pump	Model	Combined Pump YPB8-16	
	Fuel Flow Rate (m ³ /h)	8-16	
	Working Pressure (MPa)	0.25-0.35	
	Revolving Speed (r/min)	450-950	
	Rated Power (kw)	4	

Chapter 3, QUANWEI Combined Fuel Pump

Brief introduction of YPB8-16 fuel pump:

ISUZU fuel tanker truck use TOP Chinese brand Combined Fuel Pump and pump model is YPB8-16, which separated with Pump A and Pump B. 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. Advanced features for the pump showing as below: Simple Structure, Smooth Operation, High Efficiency and Reliable Operation.

Below is overview for YPB8-16 model combined fuel pump:



Fuel Pump	Model	Combined Pump YPB8-16
	Front Pump	Pump A
	Rear Pump	Pump B
	Fuel Flow Rate (m ³ /h)	8-16
	Working Pressure (MPa)	0.25-0.35
	Revolving Speed (r/min)	450-950
	Rated Power (kw)	4

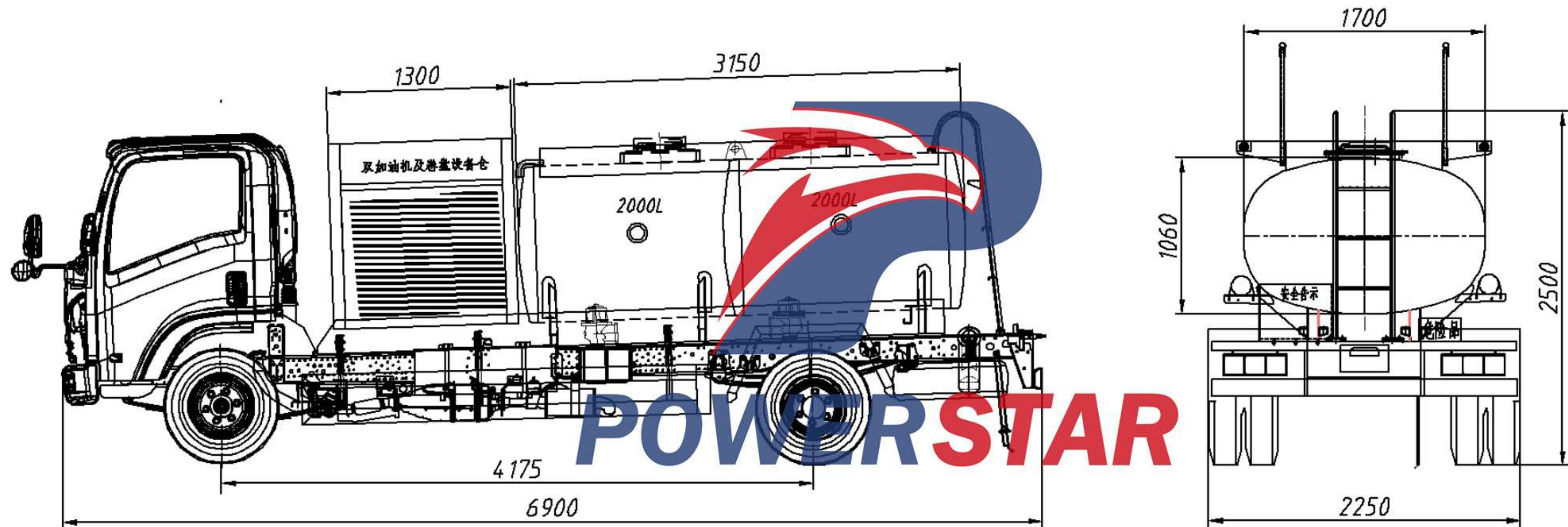
How to Installation & Maintenance YPB8-16 combined fuel pump:

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 0.35MPa
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	<p>The pump revolution speed should be from LOW to HIGH, and speed up slowly. Not allowed any over revolution speed or any instability speed</p>
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	<ol style="list-style-type: none"> 1. Pull out Pump A or Pump B firstly, then press clutch pedal and pull out the PTO 2. 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 passenger side of tank installed the Pump in & Pump out valves, middle box equipped with two TOKHEIM Refueling Machines and matchable 36m hose reel; on top of tank equipped two Euro standard Manholes, also aisle and handrail on two sides; at rear of the tank equipped climbing ladder. The whole fuel tank is oval shape, separated two tanks 2000Liters + 2000Liters:

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

Euro standard manhole covers with Key (Top of tank)

Safety Fence (Top of tank)

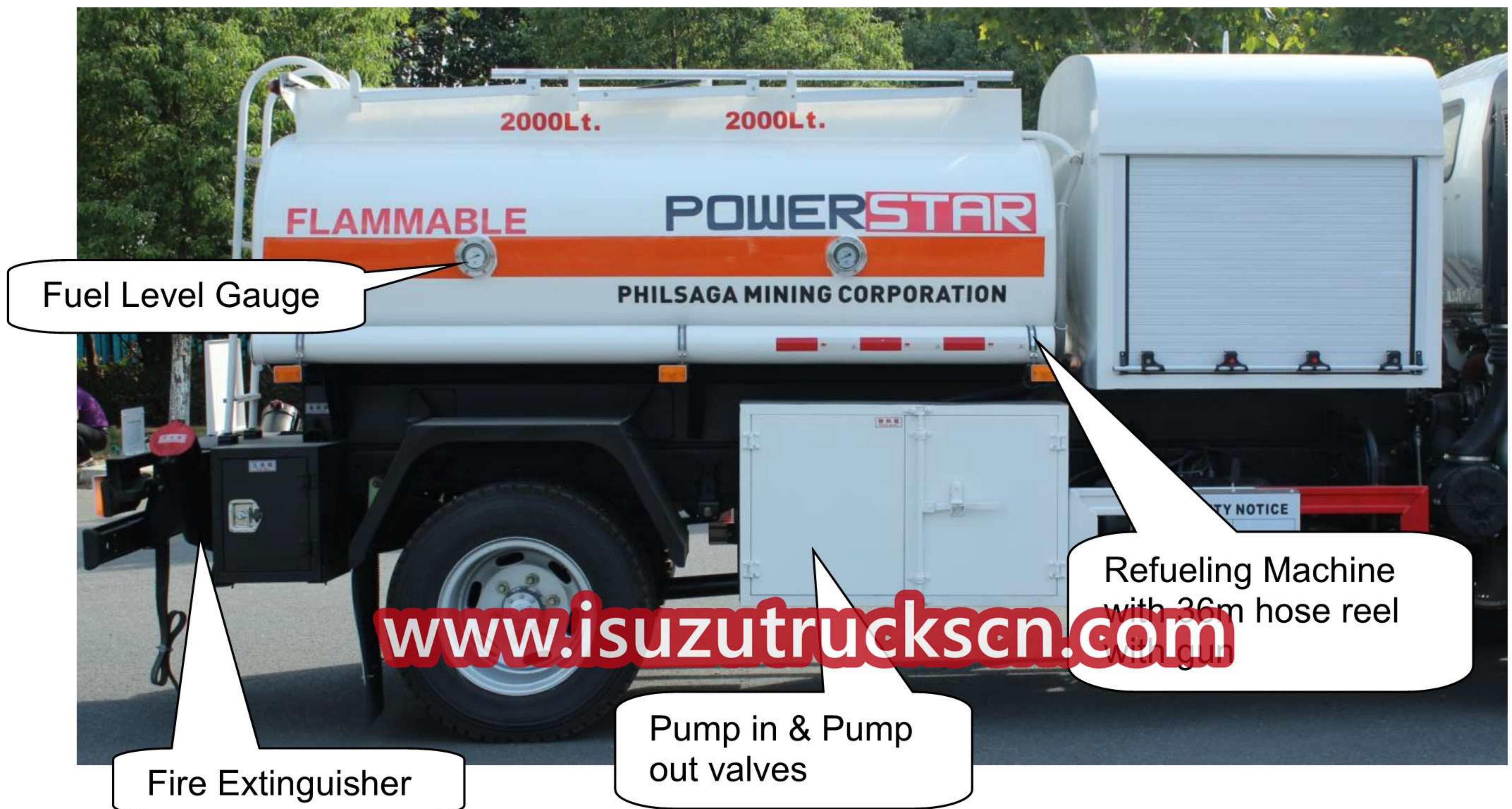
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Rear of the Tank: Rear Climbing Ladder, Submarine Emergency Stop Button & Pipeline Container



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



TOKHEIM Refueling Machine

36m hose reel with gun



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

YPB6-18 Fuel Pump



Fuel Inlet Valve 2

Fuel Outlet Valve 1

Fuel Inlet Valve 4

Fuel Outlet Valve 3

NOTICE-----Drive Side:

Pump B control driver side Refueling Machine and 36m Hose Reel



Pump A

Pump B **Pump A**

Pump B



NOTICE-----Passenger Side:

Pump A control passenger side Refueling Machine and 36m Hose Reel

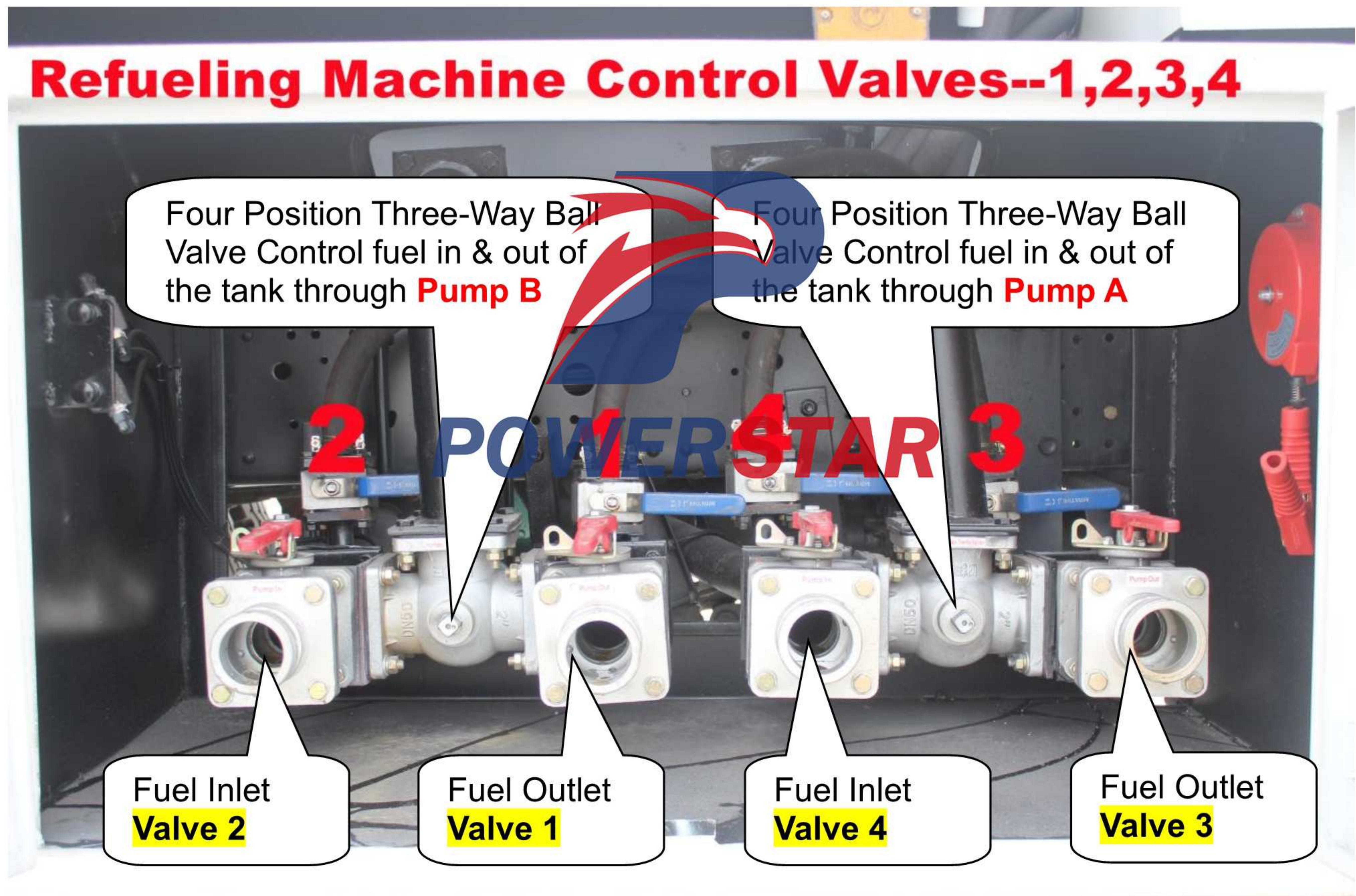


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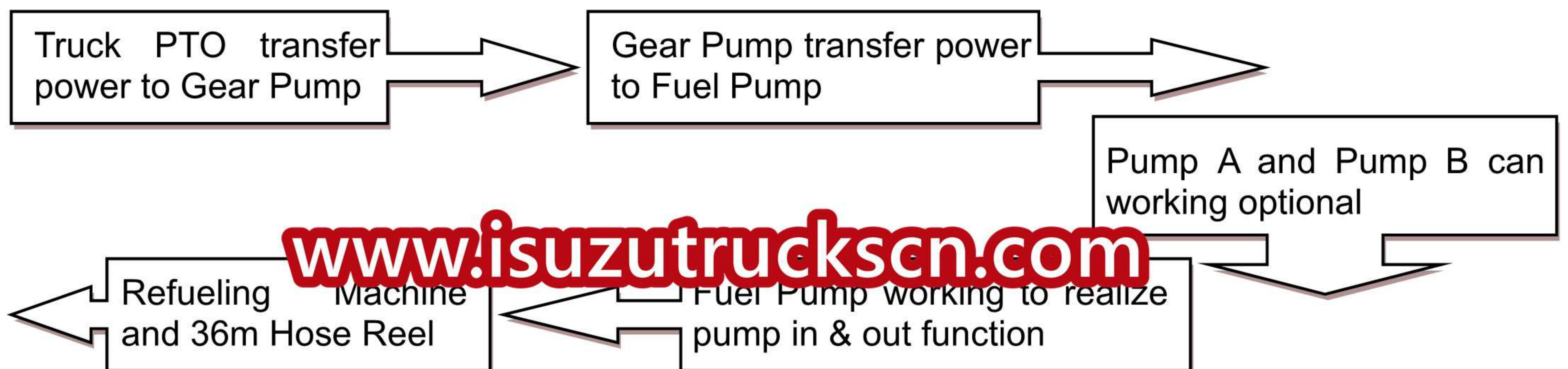
ii ,Fuel Pipeline Structure Components

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 two sets Refueling Machine and 36m Hose Reel, and on passenger side of the tanker equipped Fuel inlet & outlet valves (Pipeline system as below):



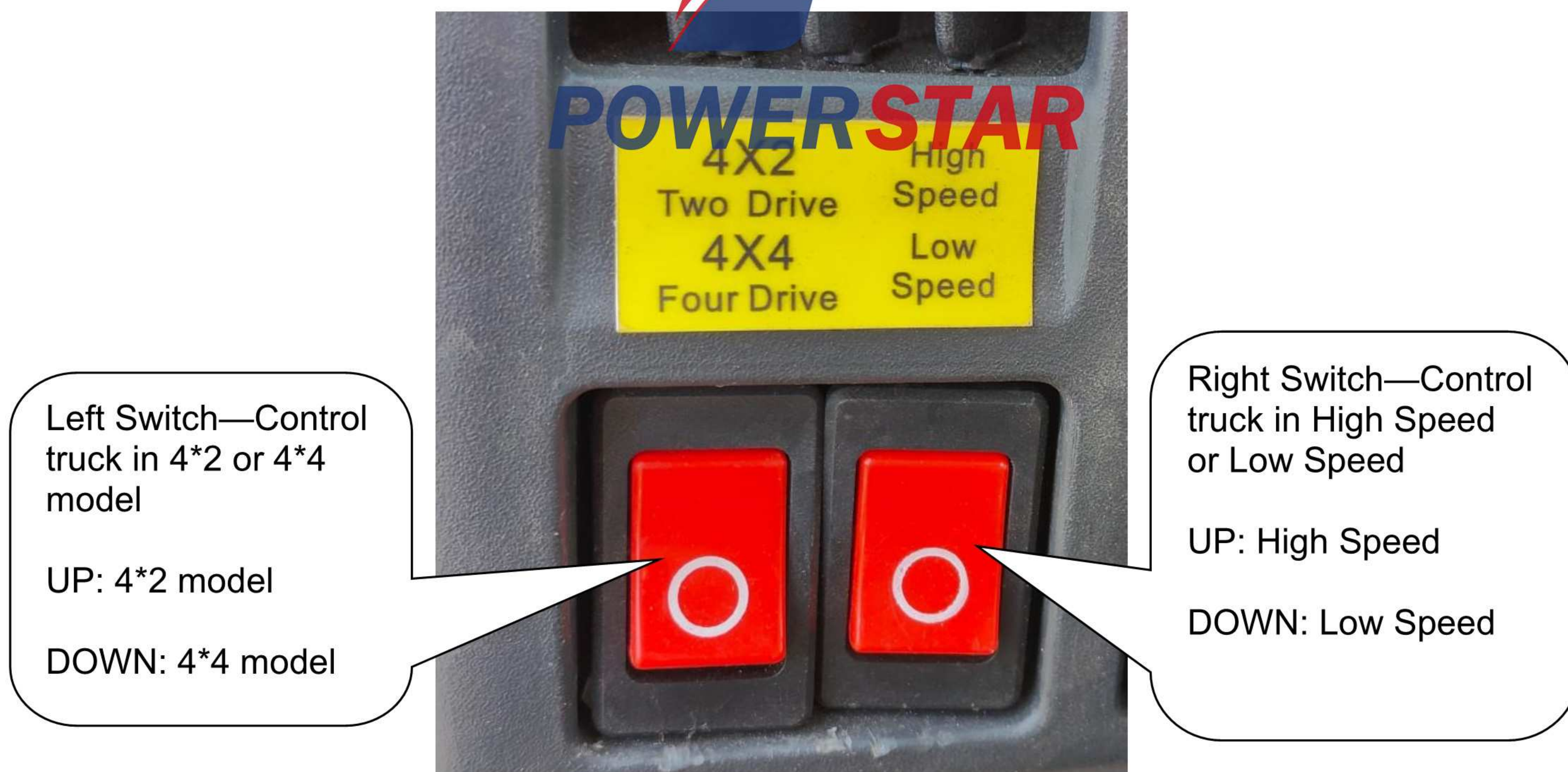
Simple working principle guidance:



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, 4x4 Four Drive model can be only used at Low Speed. 4x2 Two Drive model can be optional at 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 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 rotate the fuel pump. The fuel pump A and B, pipelines, valves, joints, refueling machine and 36m 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 refueling machine and 36m 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, separated with two compartments, with anti-rust painting, which is used to store and transport oil.*
- *Actuator device: includes power take off, Gear Pump, 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)**

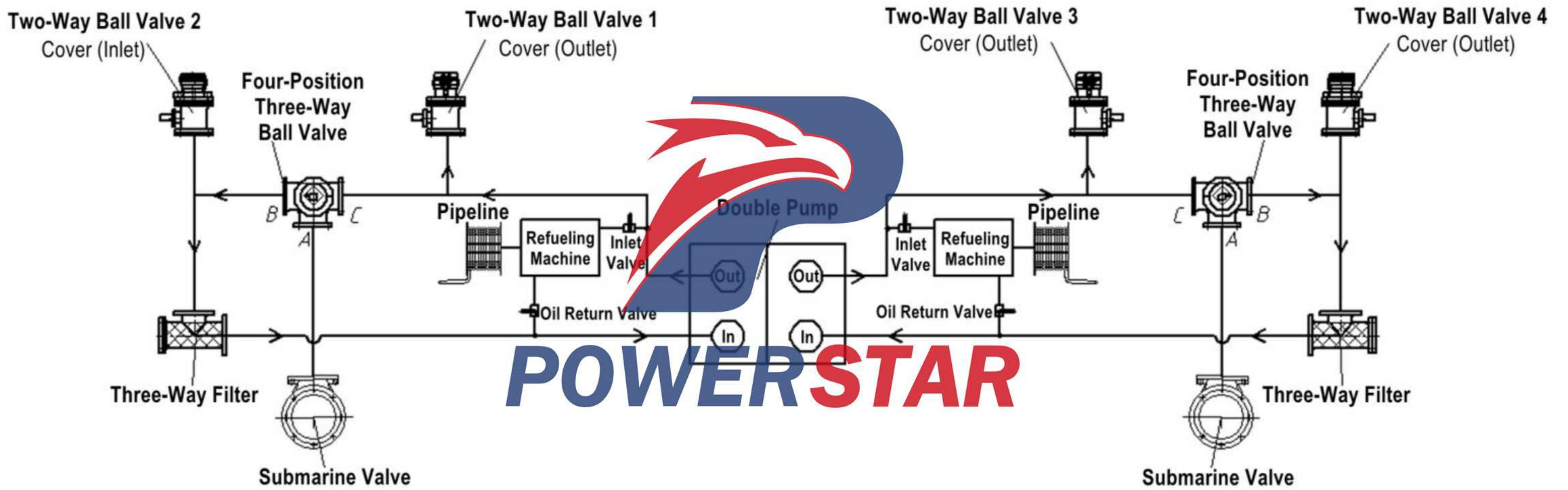
1、 Start the truck engine, Press the clutch and make sure totally separated, Pull Out the Pump A or Pump B firstly, and then Pull Out the PTO button, the fuel truck start working.



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

Pull Out the Pump A or Pump B firstly, and then Pull Out the PTO button

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



1. Oil Pump Out Process

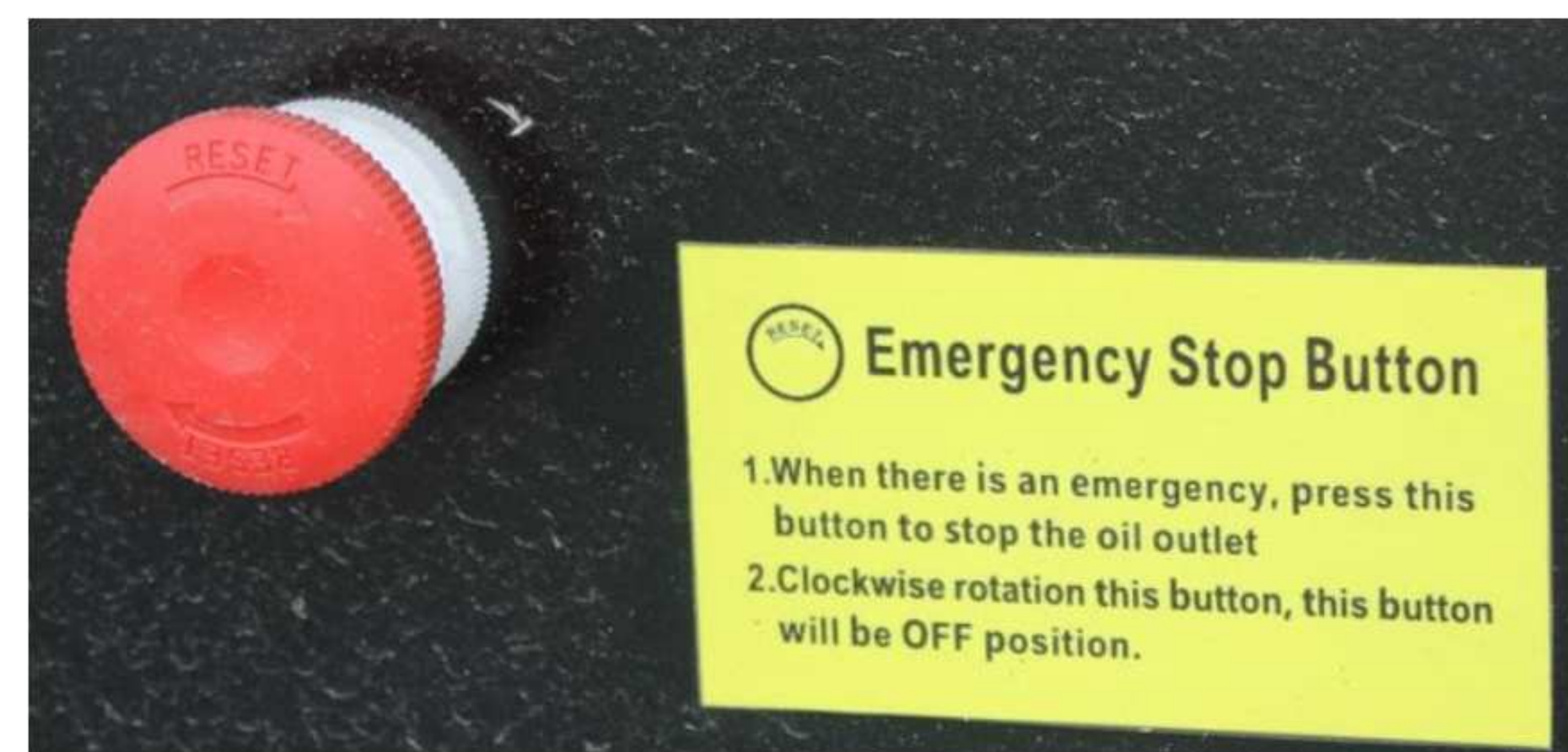
- 1), Make the Four-Position Three-Way Ball Valve to point B direction, means A and C open.
(Note: the Four-Position Three-Way Ball Valve to point any direction, means this direction blocked)
- 2), Open Two-Way Ball Valve 1 or 3, oil can pump out.
- 3), If need to use Refueling Machine, close Two-Way Ball Valve 1 and 3, Open Inlet Valve and Oil Return Valve together, then following the Manual to use Refueling Machine

2. Oil Pump In Process

- 1), Use oil pipeline to make Two-Way Ball Valve 2 or 4 and Oil Sources connected
- 2), Make the Four-Position Three-Way Ball Valve to point C direction, means A and B open. Turn off all other valves, then can start oil pump in process.
- 3), Other functions: Customers can realise all function based on the working principle.

NOTE: The front and rear Submarine Valves must keep opening Pump In and Pump Out process.

- 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, pull out Pump A or Pump B 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:

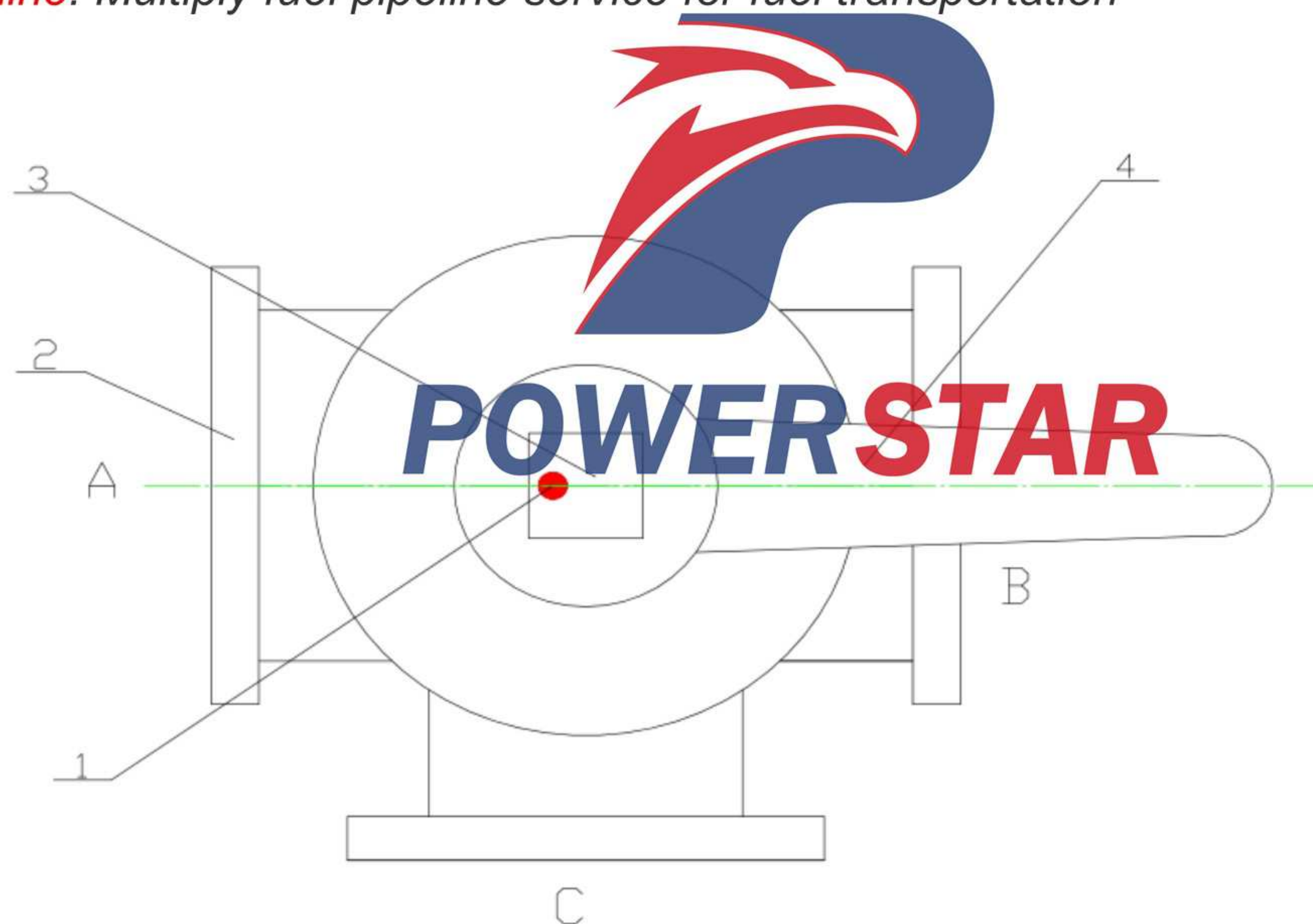
➤ **Fuel Truck Pipeline System:** There are mainly below 4 parts for fuel truck pipeline system. (Rear system based on truck component)

Fuel hose and gun: Consists of Fuel inlet & out valve, 36m hose reel and Fuel gun

Fuel Pump: YPB8-16 fuel pump, provide power for fuel inlet & outlet of tank

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

Fuel Pipeline: Multiply fuel pipeline service for fuel transportation

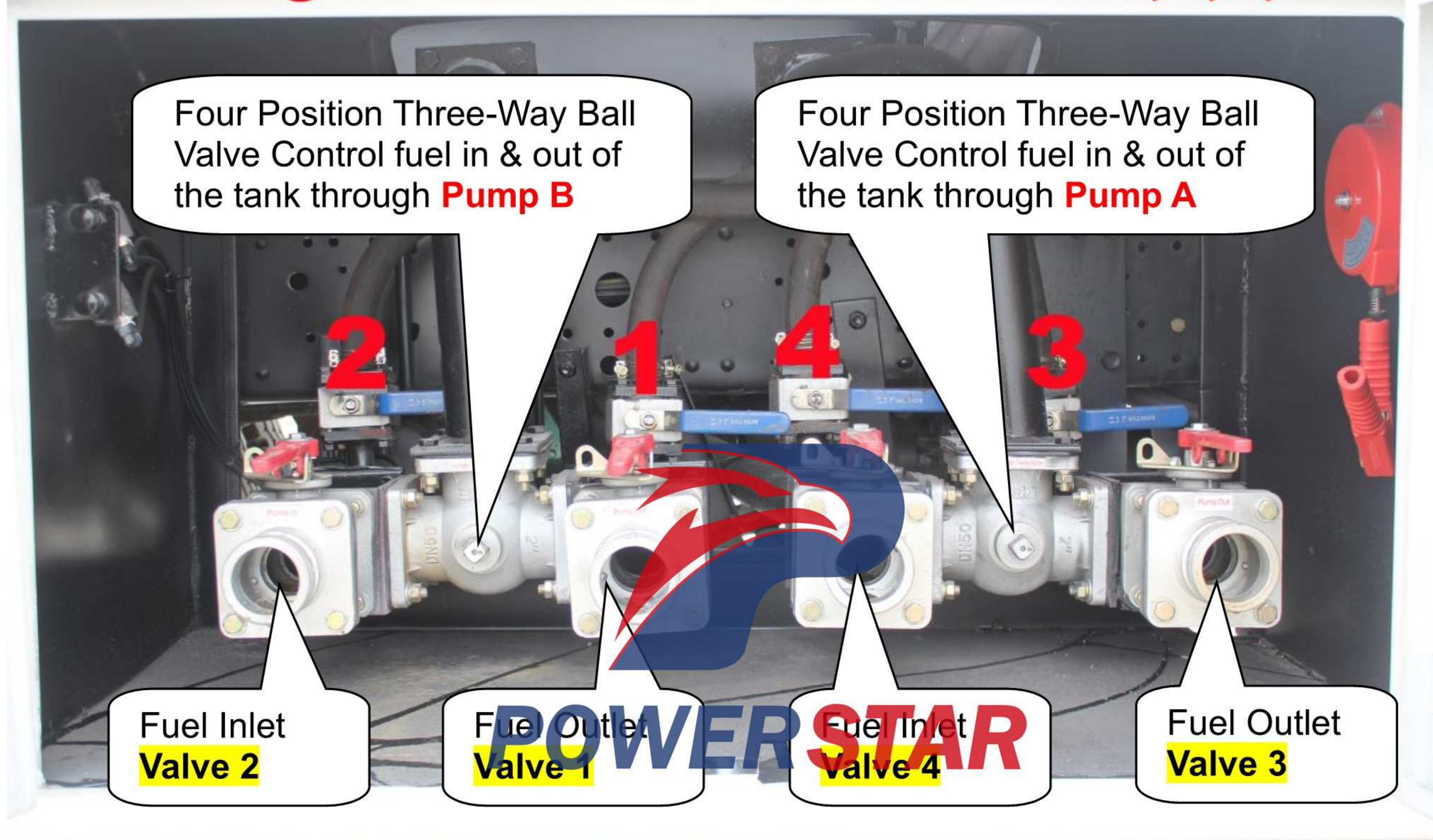


(1-Red Point 2-Valve 3-Valve Rod 4-Joystick)

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

Details refer to Page 11

Refueling Machine Control Valves--1,2,3,4



➤ **The Schedule of Pumping-In Course:**

Pump A-----In cabin Pump A button ON, Fuel pipeline one side connect with **Valve 4** and other side connect with oil source, make sure the **Fuel Outlet Valve 3** closed; **Fuel Inlet Valve 4** open, the **Four Position Three-Way Ball Valve** right side closed, close the **Refueling Machine Control Valves 3 & 4** (which connect the Refueling Machine & Fuel Hose Gun), make sure the **Submarine Emergency Valve** open. Then oil sucked into the pump through **Fuel Inlet Valve 4** under negative pressure of fuel pump, then into the fuel tank.

Pump B-----In cabin Pump B button ON, Fuel pipeline one side connect with **Valve 2** and other side connect with oil source, make sure the **Fuel Outlet Valve 1** closed; **Fuel Inlet Valve 2** open, the **Four Position Three-Way Ball Valve** right side closed, close the **Refueling Machine Control Valves 1 & 2** (which connect the Refueling Machine & 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.

➤ **The Schedule of Pumping-Out Course:**

Pump A-----Make sure the **Fuel Outlet Valve 3** open; **Fuel Inlet Valve 4** closed, the **Four Position Three-Way Ball Valve** left side closed, close the **Refueling Machine Control Valves 3 & 4** (which connect the Refueling Machine & 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 3**.

Pump B-----Make sure the **Fuel Outlet Valve 1** open; **Fuel Inlet Valve 2** closed, the **Four Position Three-Way Ball Valve** left side closed, close the **Refueling Machine Control Valves 1 & 2** (which connect the Refueling Machine & 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**.



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➤ **The Schedule of Refueling Course:**

Pump A-----Make sure the **Fuel Outlet Valve 3** closed; **Fuel Inlet Valve 4** closed, **Three-Way Ball Valve** left side closed, open the **Refueling Machine Control Valves 3 & 4** (which connect the Refueling Machine & Fuel Hose Gun), open the **Submarine Emergency Valve**. Then oil can be pumping-into the refueling machine and 36m hose reel under pressure of fuel pump. Then you can operate the Fuel Dispenser to refuel all trucks.

Pump B-----Make sure the **Fuel Outlet Valve 1** closed; **Fuel Inlet Valve 2** closed, **Three-Way Ball Valve** left side closed, open the **Refueling Machine Control Valves 1 & 2** (which connect the Refueling Machine & Fuel Hose Gun), open the **Submarine Emergency Valve**. Then oil can be pumping-into the refueling machine and 36m hose reel under pressure of fuel pump. Then you can operate the Fuel Dispenser to refuel all trucks.

Chapter 6, TOKHEIM Refueling Machine Introduction

i. Key parameters and Ambient condition

- 1) Accuracy: $\pm 0.3\%$
- 2) Repeatability accuracy: $\pm 0.15\%$
- 3) Flow-rate range: Standard no more than 60L/min
- 4) Minimum measurable volume: 5 liter when flow-rate is under 45L/min
20 liter when flow-rate is no less than 45 liter
- 5) Noise: $\leq 80\text{dB (A)}$
- 6) Display range of each delivery: volume 0.00 ~ 9999.99 Liter;
amount 0.00 ~ 9999.99 Yuan
- 7) Display range of shift:
Volume 0.00 ~ 999999.99 Liter, Amount 0.00 ~ 999999.99 Yuan. Unit price 0.00 ~ 99.99 Yuan.
- 8) Environment temperature: $-25\text{ }^{\circ}\text{C} \sim +55\text{ }^{\circ}\text{C}$ (For high-cold area: $-40\text{ }^{\circ}\text{C} \sim +60\text{ }^{\circ}\text{C}$)
- 9) Relative humidity: 30% ~ 90%
- 10) Atmospheric pressure: 86kPa ~ 106kPa
- 11) Ambient condition of electrical explosion-proof: Comply with Chinese regulation GB 3836 or local relevant safety regulations.
- 12) Power supply: Voltage DC12V、DC24V

ii. Model and specification

Vehicle Fuel dispenser

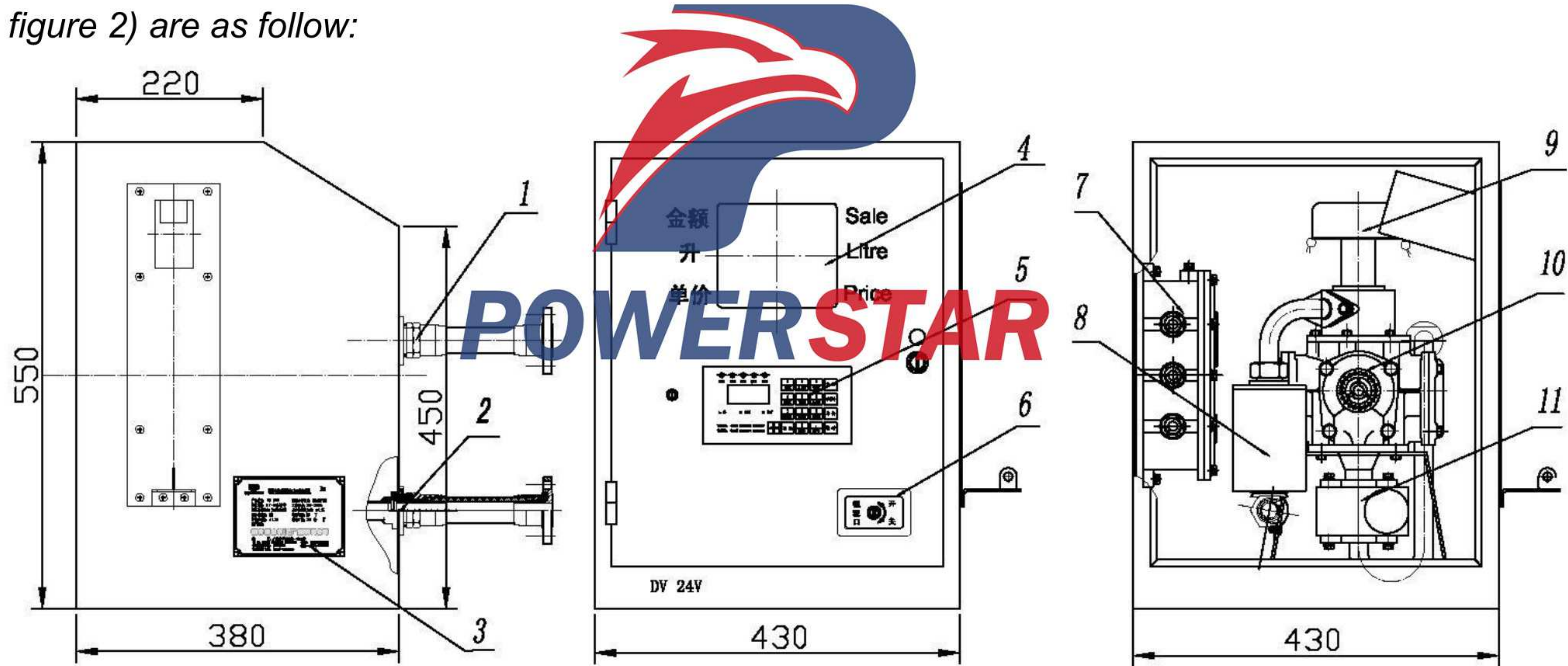
SN	Model	Size (mm)	Weight (Kg)	Remarks
1	HS1812B	430×380×550	40	
2	HS2812B	500×450×650	65	

iii. Refueling Dispenser Structure

The hydraulic power of vehicle fuel dispenser is supplied by cars. Take HS1812B and HS 2818B as examples.

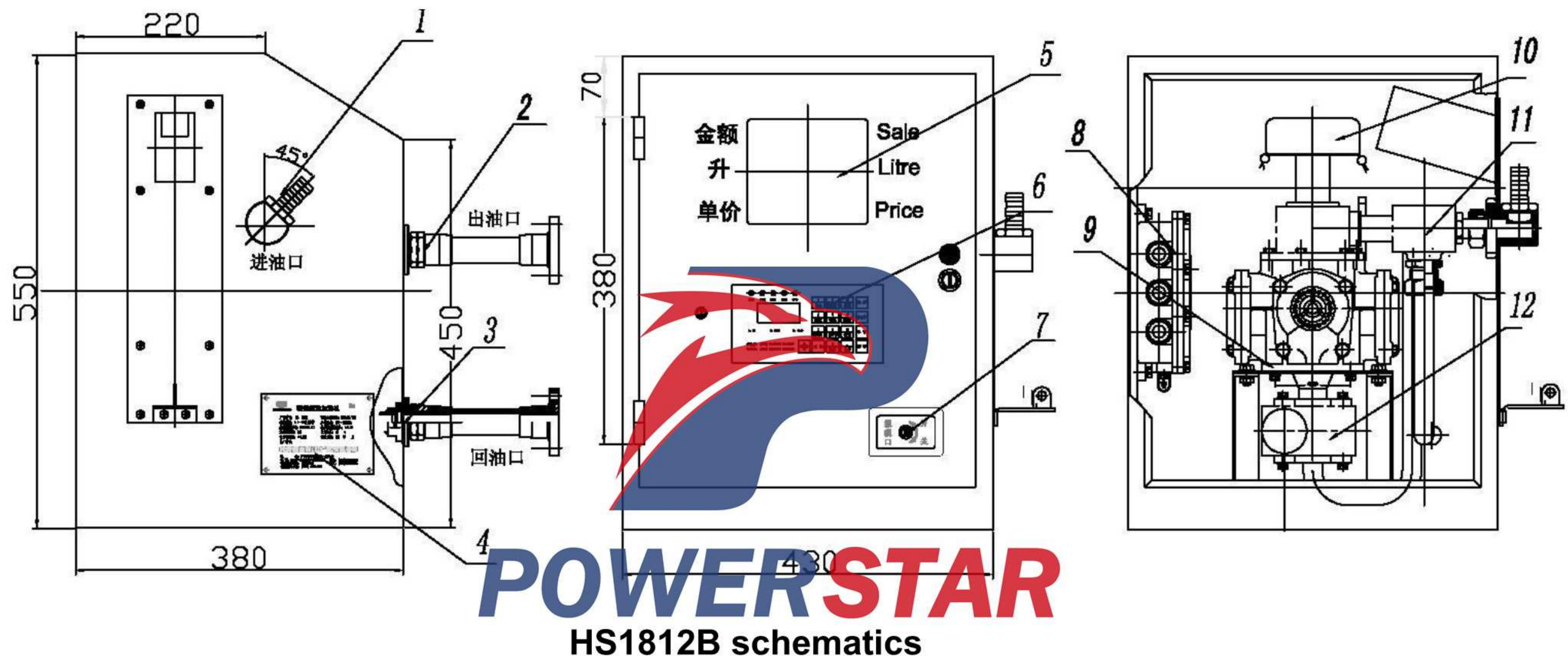
1) HS 1812B Schematics:

Vehicle fuel dispenser consists of cladding, key components inside the dispenser and other components. Main components include meter, control board, pump, ex-junction box, electric control valve and tax-claimed calculator; other components include keypad, nozzle, display, etc. The introduction for HS`1812B with filter (SEE figure 1) and with bypass valve (SEE figure 2) are as follow:



HS1812B schematics

- | | | | |
|-----------|---------------------------|----------------------------|---------------|
| 1: Inlet | 2: Outlet | 3: Nameplate | 4: Display |
| 5: Keypad | 6: Tax-claimed window (*) | 7: Ex-junction Box | 8: Filter (*) |
| 9: Sensor | 10: Meter | 11: Electric control valve | |

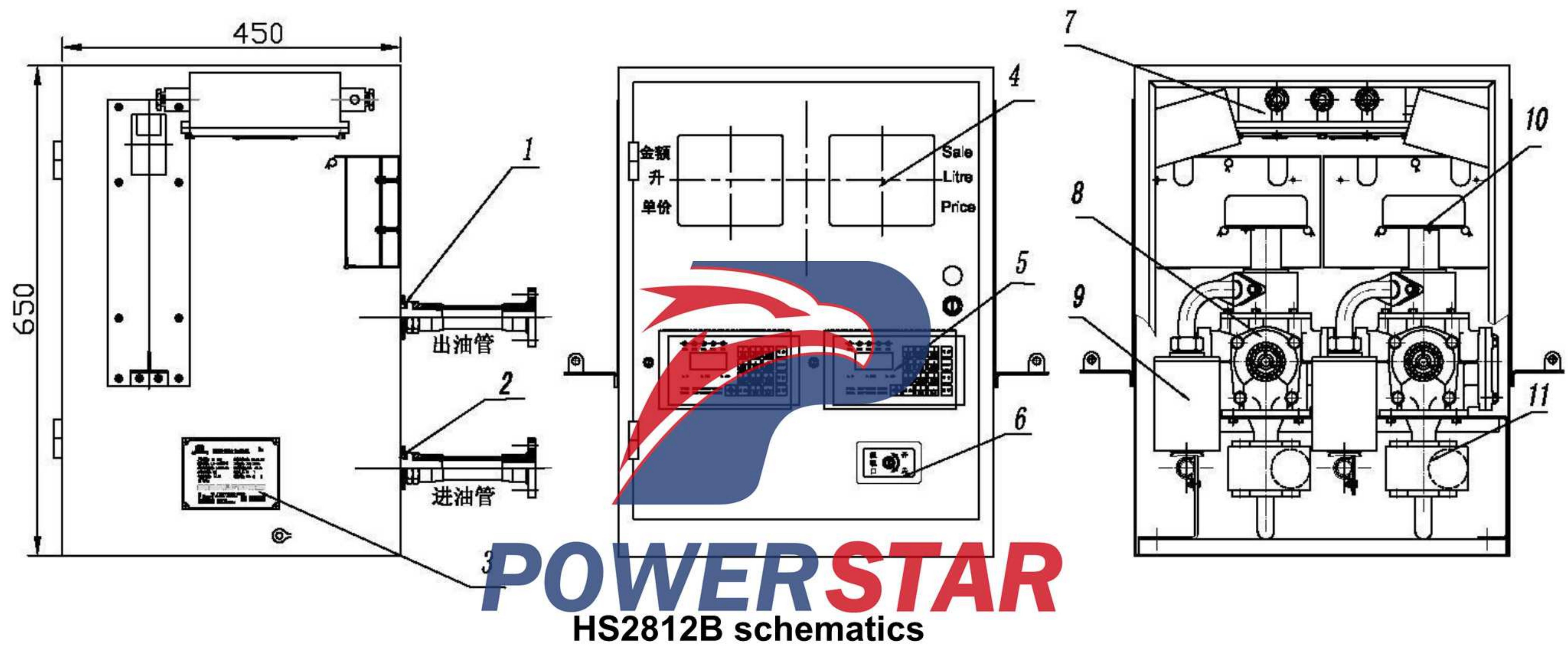


- | | | | |
|----------------------------|------------|---------------------------|--------------------|
| 1: Inlet | 2: Outlet | 3: Oil return pipe | 4: Nameplate |
| 5: Display | 6: Keypad | 7: Tax-claimed window (*) | 8: Ex-junction Box |
| 9: Meter | 10: Sensor | 11: Bypass Valve (*) | |
| 12: Electric control valve | | | |

Remarks: (*) this component is option. if bypass valve is not configured in the dispenser, it must be retrofit in submerged pump to prevent the hydraulic system. If filter is not configured in the pump unit, it must be assembled in the submerged pump.

2) HS 2812B Schematics:

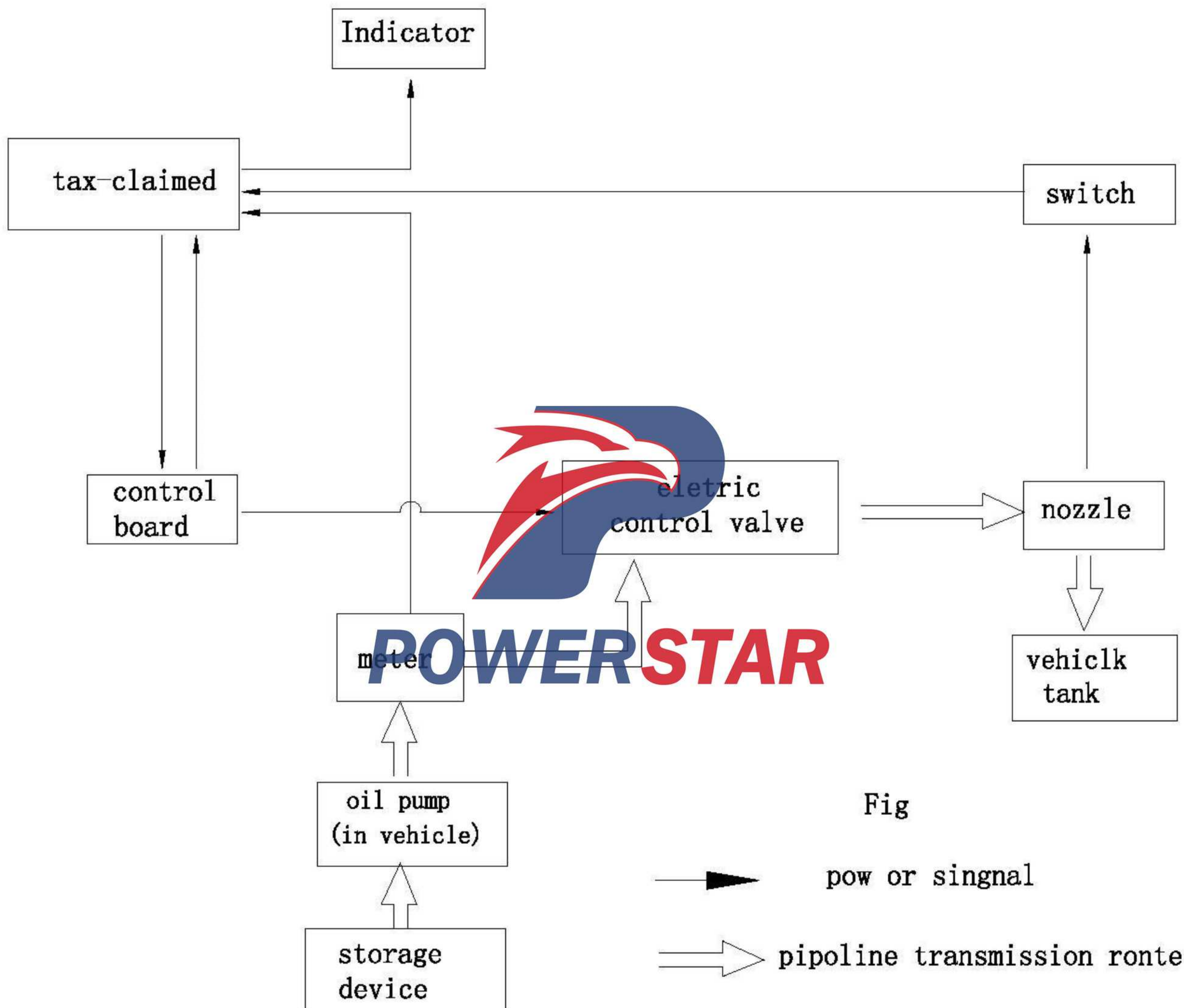
Vehicle fuel dispenser consists of cladding, key components inside the dispenser and other components. Main components include meter, control board, pump, ex-junction box, electric control valve and tax-claimed calculator; other components include keypad, nozzle, display, etc. the introduction for HS2812B is as follow:




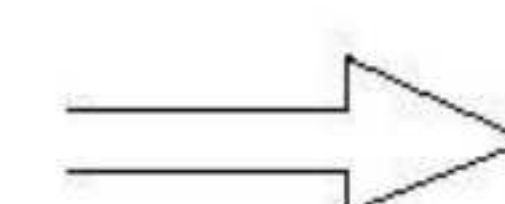
- | | | | |
|---------------|---------------------------|----------------------------|------------|
| 1: Inlet | 2: Outlet | 3: Nameplate | 4: Display |
| 5: Keypad | 6: Tax-claimed window (*) | 7: Ex-junction Box | 8: Meter |
| 9: Filter (*) | 10: Sensor | 11: Electric control valve | |

Remarks: (*) this component is option. if bypass valve is not configured in the dispenser, it must be retrofit in submerged pump to prevent the hydraulic system. If filter is not configured in the pump unit, it must be assembled in the submerged pump.

iv. Model and specification



Fig

 pow or singnal
 pipoline transmission route

Vehicle Fuel Dispenser operating principle

Procedures: life the nozzle, signal is sent to the tax-claimed calculator and open the electronic control valve. The external pump is running to suck the oil to the pump, and the hydraulic system is fully pressurized. The flow is calculated by the meter and then goes through the electric control valve, dispensed to the vehicle tank by nozzle. When dispensing, the encoder is activated to transmit the delivery into pulse signal for tax-claimed calculator. After processed, the delivery volume and amount is shown on the display. When transmission is completed switch off the nozzle. Signal is sent to close the valve and suction pump by tax-claimed calculator, and stop delivery.

v . Operation Guidance

The same calculator is used in HS series dispensers. All operation procedure is the same.

The keypad is the interface through it you can control the dispenser as your requirement. The keypad and e-lock are located on the Column of the dispenser. The layout and function of the keypad are described under and shown in Fig 2.

The keypad includes 16 keys and a 5-digit display (LCD). There are some special functional keys among them; through it you can get two input modes as follows:

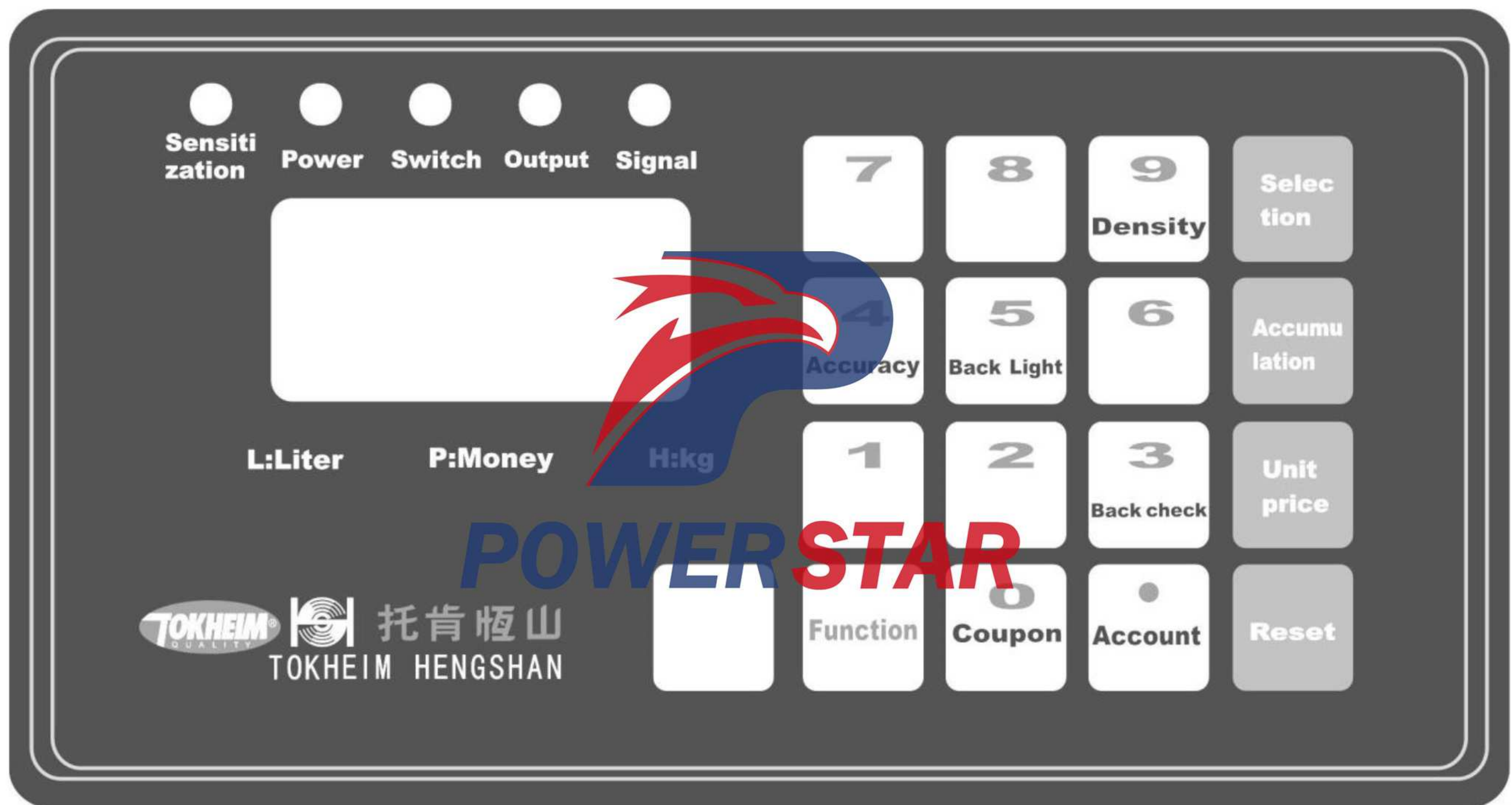
- 1) Input different numbers by press each number key independently.
- 2) If press the **Function** key together with some special digital key (which has a function mark under its digital number), you can get different function as your requirement.

For example, **Density** and number **9** share the same key. If press key **9** only, you can input the number **9**.

If pressing **Function** key first and press key **9** at the same time, then it is used to display and modify the density.

There are five indicators above the display which are used to indicate the working status of the dispenser:

- 1) If the **Power** indicator flickers, this means that the dispenser has been turned on.
- 2) If the **Switch** indicator lights, this indicates that the nozzle switch has been turned on.
- 3) If the **Output** indicator lights, this means that the computer has already sent signal to start the motor.
- 4) If the **Signal** indicator flickers, this means that the flow meter has already rotated, the counting pulse is coming in.
- 5) The **Sensitization** is a light sensor; it will automatically adjust the LCD backlight of the keypad according to the environment brightness so that you are able to read the information (which is displayed on LCD) clear.



1.1 Modify unit price

To change the retail price, please press the key as the following procedure (See Fig.8):

Reset → **Unit price** → **Number** (Data of the unit price, input 0-9 and. as required)
 → **Unlock** (*Turn e-lock key to green point position) → **Lock** (*Turn e-lock key to red point position).

*There is an e-lock in the right side near to keypad. Use a special key, which is attached to the dispenser, and turn it to the **lock** (key located in red point) or **unlock** (key located in red point) position as required. You must use the special key to unlock & lock.

For example: Input the unit price of 2.35, press the key as the following:

Reset → **Unit price** → **2.35** → **Unlock** → **Lock**

1.2 Modify the fuel density

To change the fuel density, please press the key as the following procedure (See Fig.2):

Reset → **Function + Density** (Press both key simultaneously) → **Number** (Data of the density,

input 0-9 and . as required) → **Unlock** (*Turn e-lock key to green point position) → **Lock** (*Turn e-lock key to red point position).

For example: Input the 1.200 liter / kilogram as the density of gasoline, press the key as the following: **Reset** → **Function + Density** → **1.200** → **Unlock** → **Lock**

1.3 How to read the total of liter, sale and kilogram

There are three modes of total, including total liter **L**, total sale **P**, total kilogram **H**. The max. number for the total is 999999.99. Each total will display on the main LCD panel on the e-box door.



To access the total mode and read each total, please press the key on the column keypad as following procedure (See Fig.8): **Reset** → **Accumulation** → **Selection**

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By pressing **Selection** key every time, the letters of **PP**, **HH**, **LL** will appear on the column keypad LCD alternately. At the same time, the main LCD will display relevant total information respectively:

Mode of total	Location of Display			
	Letters shown on keypad LCD (Located on the column)	Main LCD panel (Located on the e-box door)		
		Max. number shown on Sale LCD	Max. number shown on Liter LCD	Max. number shown on Price LCD
Total Liter	LL	99	9999.99	99.99 (Unit price is fixed as you set, can not be Changed during operation)
Total Kg.	HH	99	9999.99	99.99 (Unit price is fixed as you set, can not be Changed during operation)
Total Sale	PP	99	9999.99	99.99 (Unit price is fixed as you set, can not be Changed during operation)

vi. Troubleshooting

Symptoms	Causes	Solution
No delivery	Valve not open Oil insufficient in tank filter stuck or blocked Leakage in pipeline or foot lave failure meter failure Electric control valve inefficient main valve not open	valve open add oil clean filter Examine the pipeline clean or change the foot valve change the meter change the electric control valve change the nozzle
Meter maximum accuracy is out Tolerance	Meter Broken	adjust the accuracy
Too high noise and vibration	Foot valve is not open enough and oil supply is insufficient The opening of valve in the pipeline is not enough or pipeline blocked Filter stuck Bypass valve blocked or spring is too tensioned draft and rotor or shaft worn out	change the foot valve check the valve and pipeline change the filter change the bypass valve or adjust the spring change the pump
Delivery but no Totalize	Shaft of the meter broken	change the shaft
Nozzle cannot shut-off Automatically	Nozzle spout and nozzle cannot match closely membrane of the nozzle worn out Nozzle cover cannot be sealed completely	change or retrofit the nozzle spout change the menbrane change the nozzle cover
High flow failure	Electric control membrane broken Coin of main valve failure	Change the membrane change the electric control valve

Error displayed	Possible Causes	Action
Dispense but no Totalize	Main board failure Encoder failure	Exchange a main board Exchange en encoder
Display LCD damaged	Vibration CD4060 damaged	C1(103)change display vibration capacitor C1(103) CD4060 change CD4060
Data lost due to Power off	Insuffucietn battery or battery failure	Check and exchange a main baod back-up Battery
Keypad failure	Microswitch damaged Display intergrated circuit damaged	Check and exchange the microswitch Exchange the keypad
All the function Failures	Control board failure Tax-claimed main board failure	Exchange control board Exchange main board

Chapter 7, 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

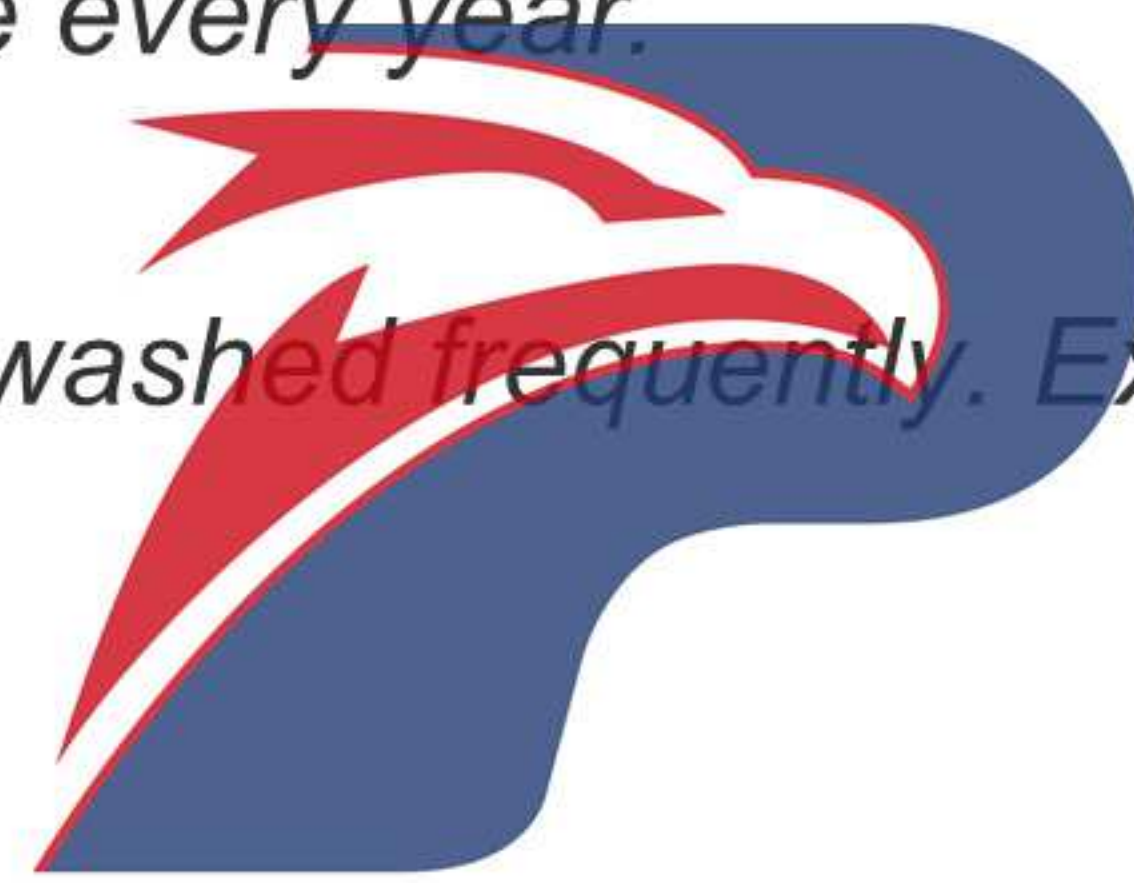
➤ It is strictly forbidden to operate the Power Take Off (PTO) under the condition of the clutch not separation (Not step the clutch pedal). When release the clutch, you should slowly. The operation of the PTO must only on the condition of neutral for clutch.

➤ 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.

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.*



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iii, Spare Parts List

Item	Products Name	Quantity
1	2.5m long Fuel Pipeline	2 units
2	Standard Tools for chassis	1 set
3	Three-Way Valve Wrench	2 unit