

HOWO Fuel Tanker Truck

User's Manual



www.howotrucks.com/

Preface

Thank you for purchasing CS products. For better using your HOWO 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.

----CS TRUCKS

Contents

Chapter 1. General Description	4
Chapter 2, Main Technical Data.....	5
Chapter 3, Combined Fuel Pump Assembly	7
Chapter 4, CENSTAR Fuel Dispenser.....	9
Chapter 5, Fuel Tanker Truck Structure Components.....	11
i ,Fuel Tanker Structure Components.....	11
ii ,Fuel Pipeline Structure Components.....	16
Chapter 5, Fuel Tanker Truck Working Principles.....	17
i ,How are the fuel trucks working?	17
ii ,What is the main component for truck?	17
iii, How to operate fuel tanker trucks? (Very Important)	18
Chapter 6, Others for Attention.....	25
i ,Precautions for Use	25
ii ,Maintenance.....	26
iii, Spare Parts List.....	26

Chapter 1. General Description

CS TRUCKS Fuel Tanker Truck based on type II HOWO 6*4 Left Hand Drive chassis, Fuel tanker capacity could up to 12,000liters, double tank 6000+6000 liters, mainly used for Fuel storage, transportation and refueling, and the working aerial can be mining, city street, factory, desert areas and other areas of need.

The vehicle designed to fully rely on the advantages of the original of HOWO brand, customized 6x4 driving model chassis, fully consider the product's convenience and reliability, also the chassis MAN 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 12CBM and safety enough to transport & refueling oil based on customer requirement.

The HOWO 6x4 Fuel 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 20m 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 HOWO 12,000L Fuel Tanker Truck)

Chapter 2, Main Technical Data

Basic parameter:

Items		6+6CBM HOWO Fuel Truck
S I Z E	Outer Dimension (L×W×H) (mm)	9500*2500*3050
	Wheelbase (mm)	4450+1450
Kerb Weight (kg)		13500
G E A R	Gearbox brand	HOWO brand HW19710
	Model	10-shift gearbox
	Type	Manual
Cab capacity (includes driver)		2
E N G I N	Brand	WEICHAI
	Model	WD615.47
	Type	Six cylinder inline, four stroke, water-cool, turbocharged Inter-cooling, diesel
	Rating Power (kW/HP)	272 / 371

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

Fuel Tanker basic parameter list

Items		Parameter	
Fuel tanker	Capacity (Liters)	6000+6000	
	Material	Standard Carbon Steel	
	Painting	Internal	With anti-rust painting
		External	White painting with Customized Logos
	Special Equipme nt	Refueling Machine	Double dispenser with 60m pipes and gun
		Refueling Hose	Customized 15m hose reel 2" size
		Valves	Equipped on side of tank
		Climbing Ladder	Equipped in the front of tank
Safety Guard		Equipped on top of tank	
Fuel Pump	Model	Combined Double Fuel Pump	

Fuel Dispenser parameter list

Fuel Dispenser	Model	CENSTAR CS20D1110F	
	Accuracy:	±0.25%	
	Flow rate range:	5 to 50 liter per minute	
	Noise:	≤72dB(A)	
	Display:	Sales 0.00 to 9999999	
	Volume:	0.00 to 99999.99	
	Unit price :	0.00 to 99999	
	Electrical totalizer :	Decimal point position can be chosen	
		Volume 0 to 42949672.95L	
		Money 0 to 42949672.95V	
	Power supply:	DC10V to DC30V	
	Working temperature:	-25oC to +55 oC	
	Relative humidity:	30% to 90%	
Package size:	540*480*650mm		
More details for Water Pump showing as below			

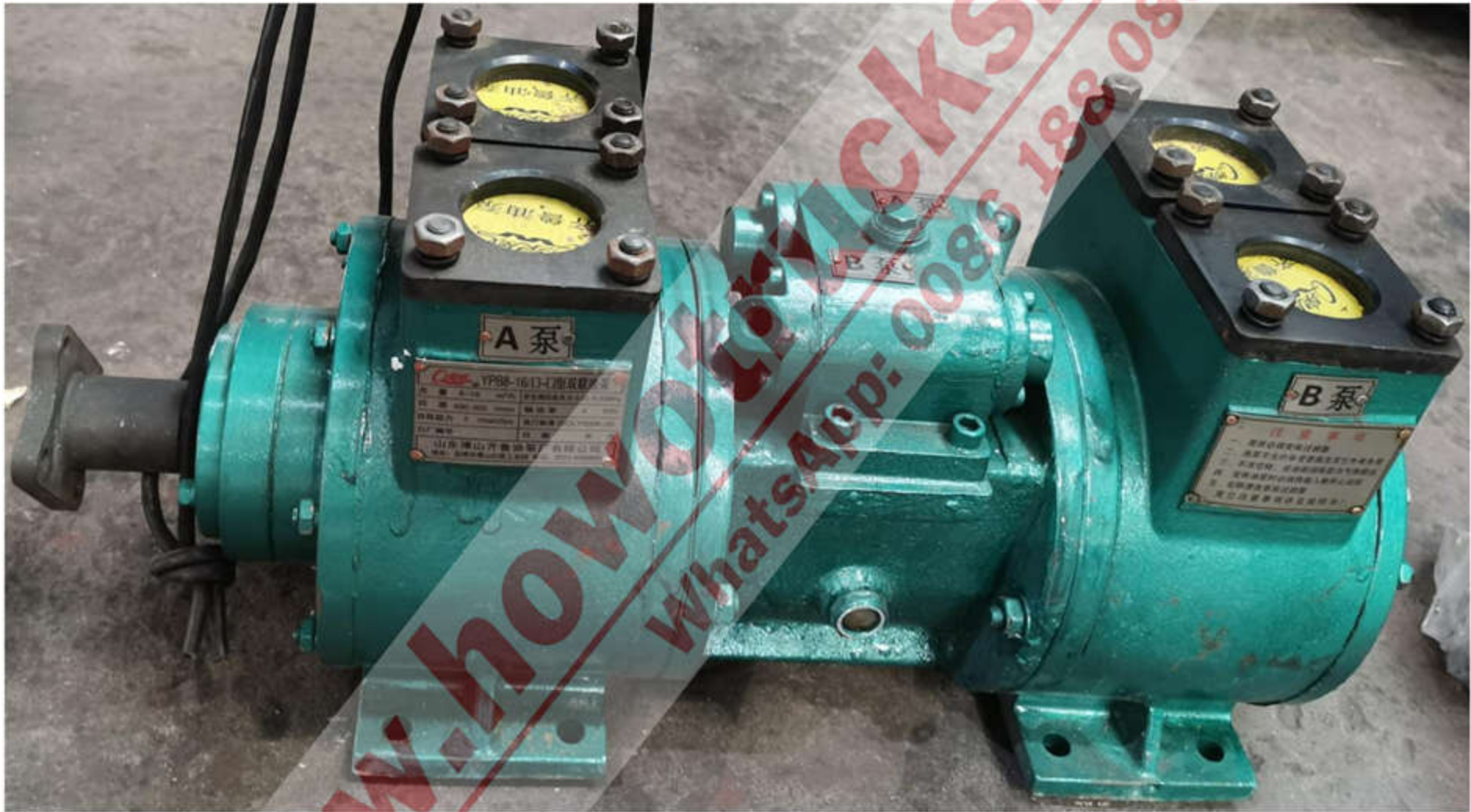


Chapter 3, Combined Fuel Pump Assembly

Brief introduction of fuel pump:

HOWO fuel tanker truck use TOP Chinese brand Combined Fuel Pump and pump model is YPB8-16, which separated with Pump 1# / A and Pump 2# / 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 combined fuel pump picture for reference:



Fuel Pump	Model	Combined Double Fuel Pump
	Front Pump	Pump 1# / A
	Rear Pump	Pump 2# / 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 combined fuel pump:

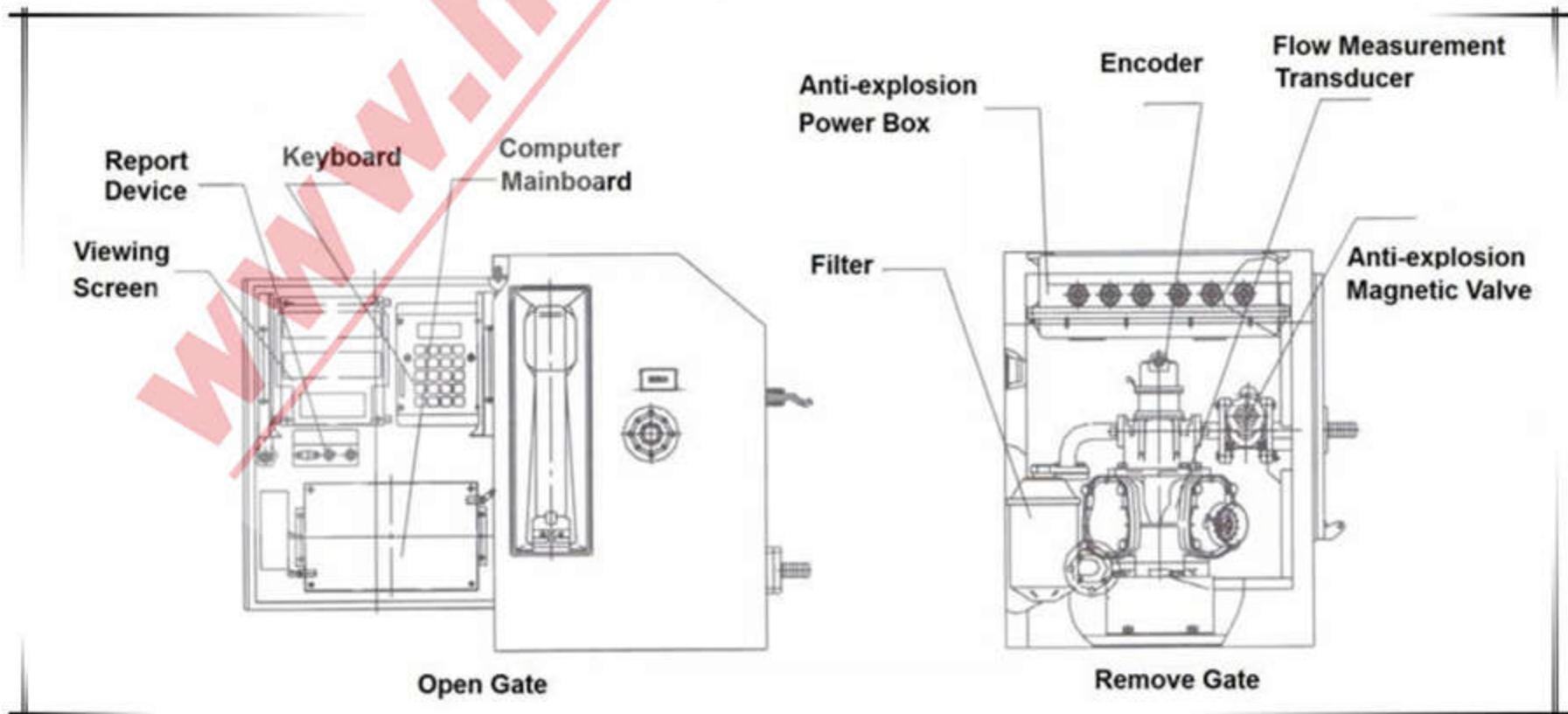
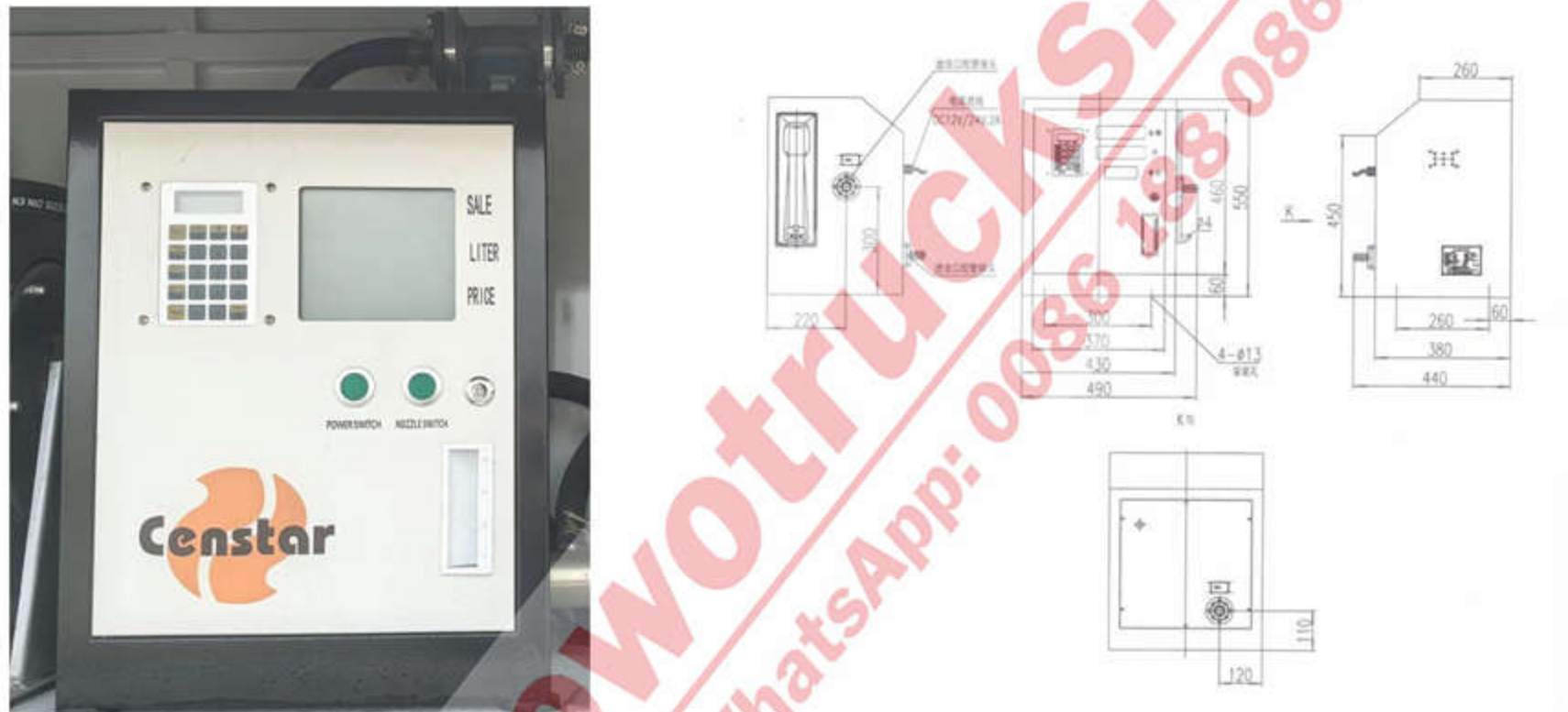
Items	Notification	
1	Usage	<ol style="list-style-type: none"> 1. Installed on Fuel Tanker Truck 2. Installed on Fuel Storage House
2	What need to pay attention while installed on fuel tanker truck	<ol style="list-style-type: none"> 1. The pump get power from PTO 2. The pump is installed in hanging bracket 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	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	<ol style="list-style-type: none"> 1. Pull out Pump 1# or Pump 2# firstly, then press clutch pedal and pull out the PTO 2. When no medium inside the fuel pump, strictly forbidden starting

Chapter 4, CENSTAR Fuel Dispenser

Brief introduction of CS20D1110F Fuel Dispenser:

CENSTAR Fuel Dispenser are all installed at rear of the fuel tanker truck and mainly used for refueling all kinds of trucks. This HOWO fuel truck equipped with two sets CS20D1110F model fuel dispenser, with detailed specification showing on chapter 2. Also the refueling machine complies with national standards GB/T9081-2008. Advanced features for the pump showing as below: Simple Structure, Smooth Operation, High Efficiency and Reliable Operation.

Below is overview for CS20D1110F model fuel dispenser for reference:



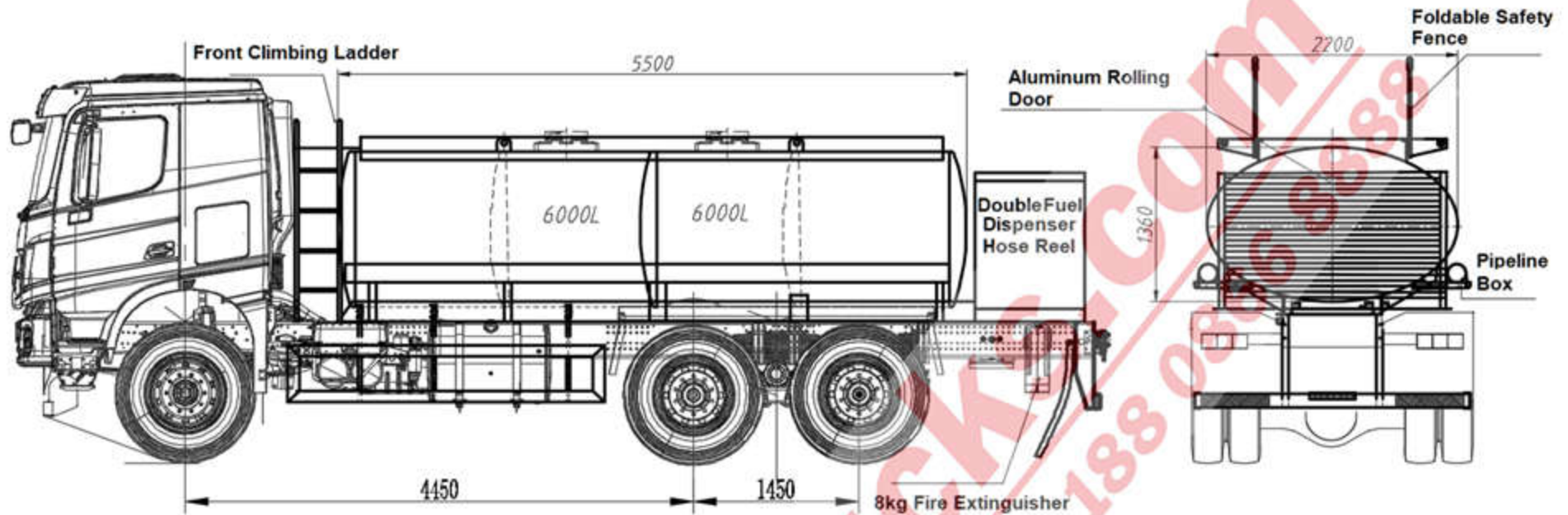
How to Maintenance CS20D1110F fuel dispenser:

Items	Notification	
Regular inspection & Maintenance	A Week	<p>Leakage: Inspection of pipeline, Joint, Inlet & Outlet valve Lead Sealing: Inspection of the lead sealing Filters: Inspection and see whether need to clean or change</p>
	As Required	<p>Refueling Machine Clean: Cut off power and open the gate to clean. No gasoline and diesel is allowed to wash the appearance Flow Measurement Transducer: Inspection of the accuracy Door Lock: Inspection and replace</p>
	Half Year	<p>Refueling Gun: Inspection of flexibility, add lubricant oil if not Pump: Inspection of flow rate, maintenance if necessary Filters: Inspection of dexterity</p>
FAQ	No normally Power On	<ol style="list-style-type: none"> Carefully inspecting the power connection The machine has delay Power On function, which means the shutdown time between power on and off should more than 3 second.
	Leakage on sealing or O-ring	<ol style="list-style-type: none"> The Sealing or O-ring inflate or damaged, need to smears grease or replace Bolt loose, tightening the bolt
	Non-working of LCK	<p>Normally the Hole of LCK pointing to Red light, then input parameter and turn right to have the Hole of LCK pointing to Green light, finally turn left to replacement. If not following the above operation step, the LCO will not work.</p>
	Flow rate is instability	<ol style="list-style-type: none"> The fuel level is too low and too much air inhaled, solution is make level higher The Oil pipeline is blocked. Refueling gun and filter are not opened thoroughly. Please cleaning or replace them.
	Measurement is not accurate	<ol style="list-style-type: none"> Carefully check the leakage of fuel pump, pipeline and all joints Some impurity in the oil, which damages the Flow Measurement Transducer, please repair or replace. The O-ring is damaged, please replace it Distribution valve and bottom sealing plate is dirty, please cleaning all of them

Chapter 5, Fuel Tanker Truck Structure Components

i ,Fuel Tanker Structure Components

Overview for HOWO 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, rear box equipped with two CENSTAR Refueling Machines and matchable 20m hose reel; on top of tank equipped two Euro standard Manholes, also aisle and handrail on two sides; in the front of the tank equipped climbing ladder. The whole fuel tank is oval shape, separated two tanks 6000Liters + 6000Liters:

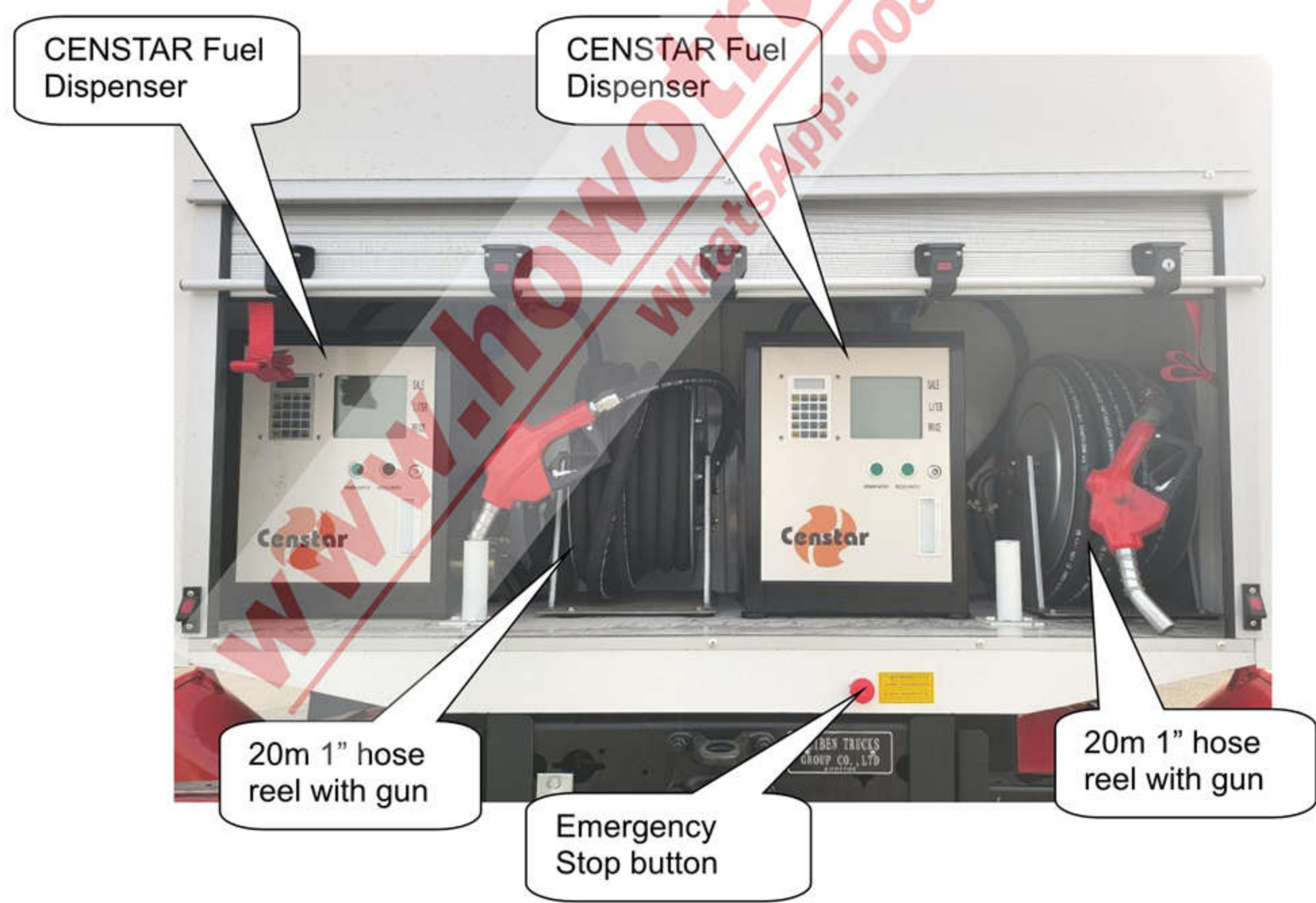
Top of the Tank: safety fence, manhole and Euro standard manhole cover

Euro standard manhole covers with Key (Top of tank)

Safety Fence (Top of tank)



Rear of the Tank: Rear Climbing Ladder, Submarine Emergency Stop Button & Rear pump room matched with 2 sets fuel dispensers and 20m hose reel



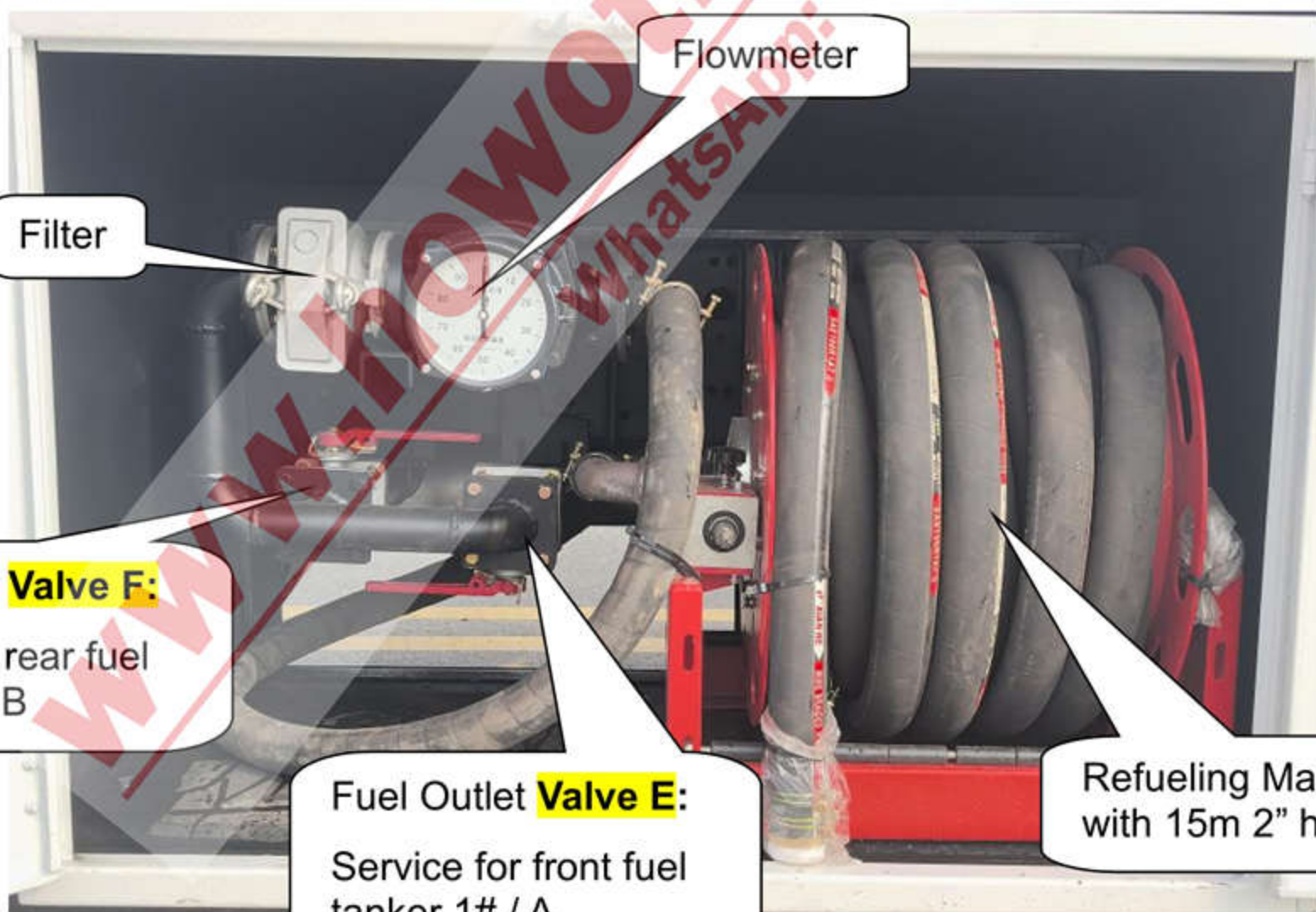
Passenger Side of the Tank: Hydraulic motor and hydraulic oil tank system, Fuel pump system, Pipeline storage box & 15m 2" hose reel with gun

Rear Pump Room



Fire Extinguisher

Refueling Machine with 15m 2" hose reel



Filter

Flowmeter

Fuel Outlet **Valve F:**
Service for rear fuel tanker 2# / B

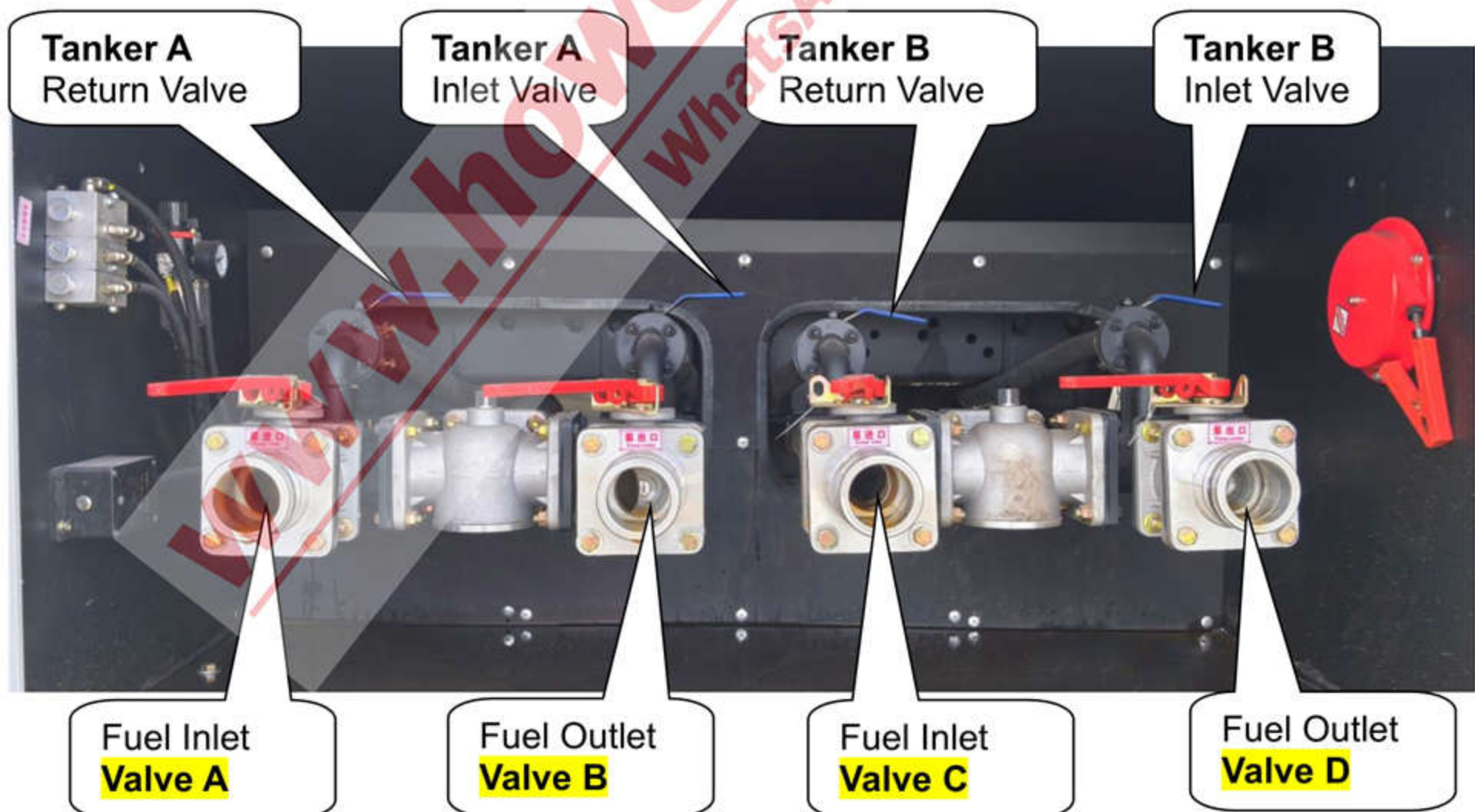
Fuel Outlet **Valve E:**
Service for front fuel tanker 1# / A

Refueling Machine with 15m 2" hose reel

Driver Side of the Tank: Hydraulic motor and hydraulic oil tank system, Fuel pump system, Pipeline storage box & 15m 2" hose reel with gun



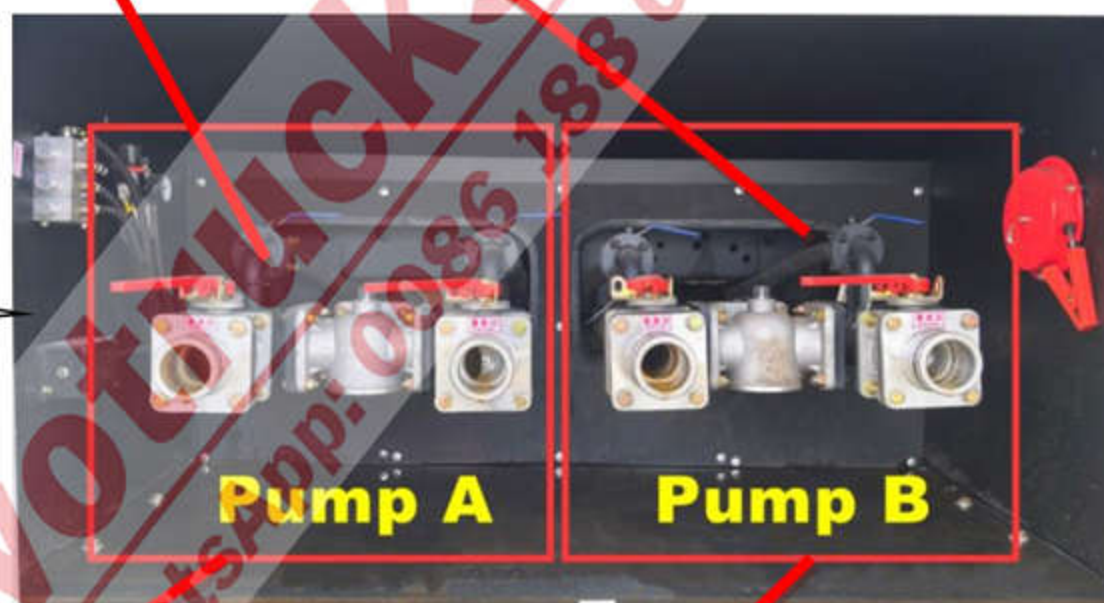
Driver's side of the Tank: Tool Box & Fuel Valves, both Return Valve and Inlet Valve control Tanker A and Tanker B are service for rear two sets fuel dispensers



NOTICE-----Control for Pump A and Pump B:



Pump in and Pump out control valves

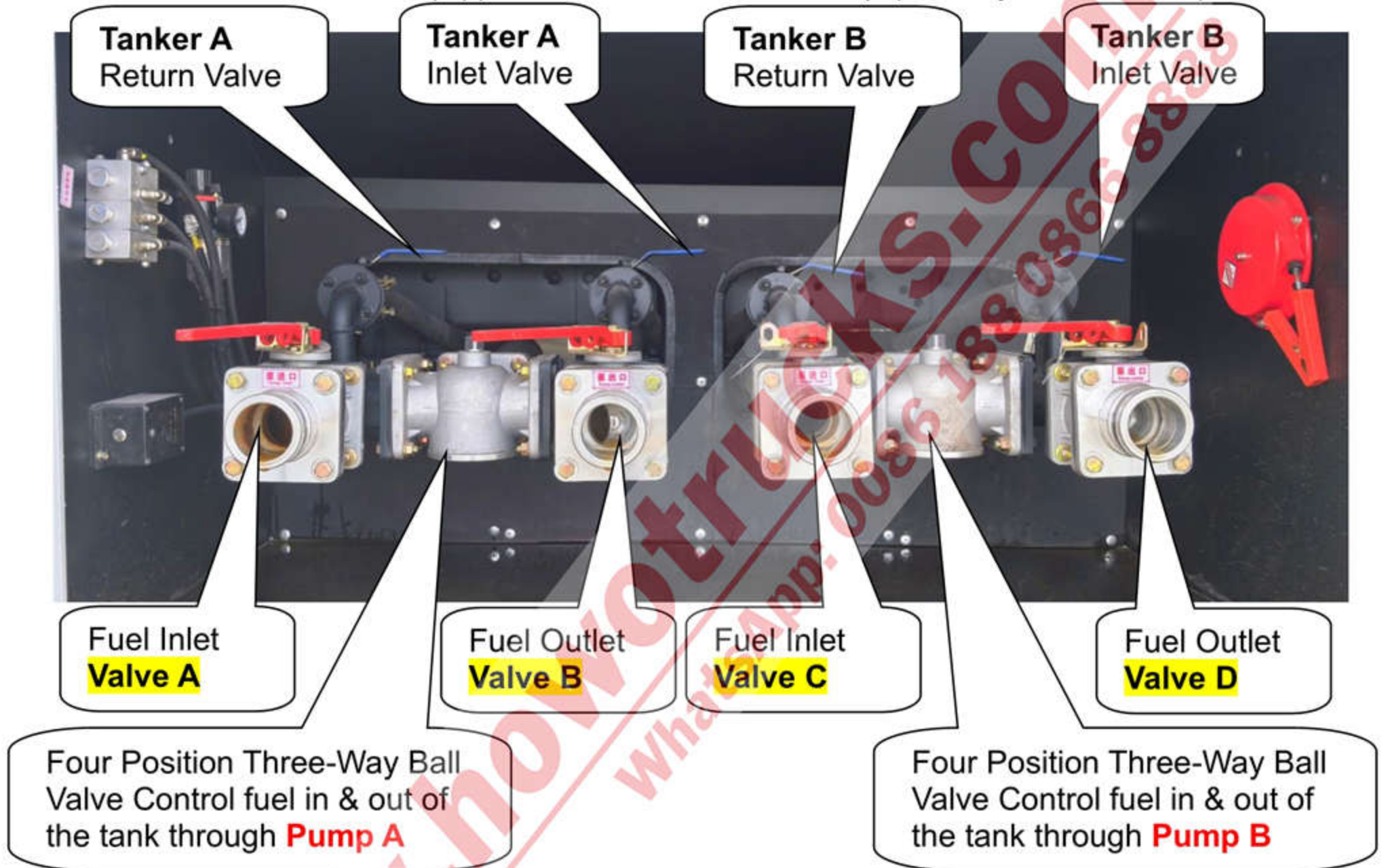


Fuel dispenser with 20m hose reel

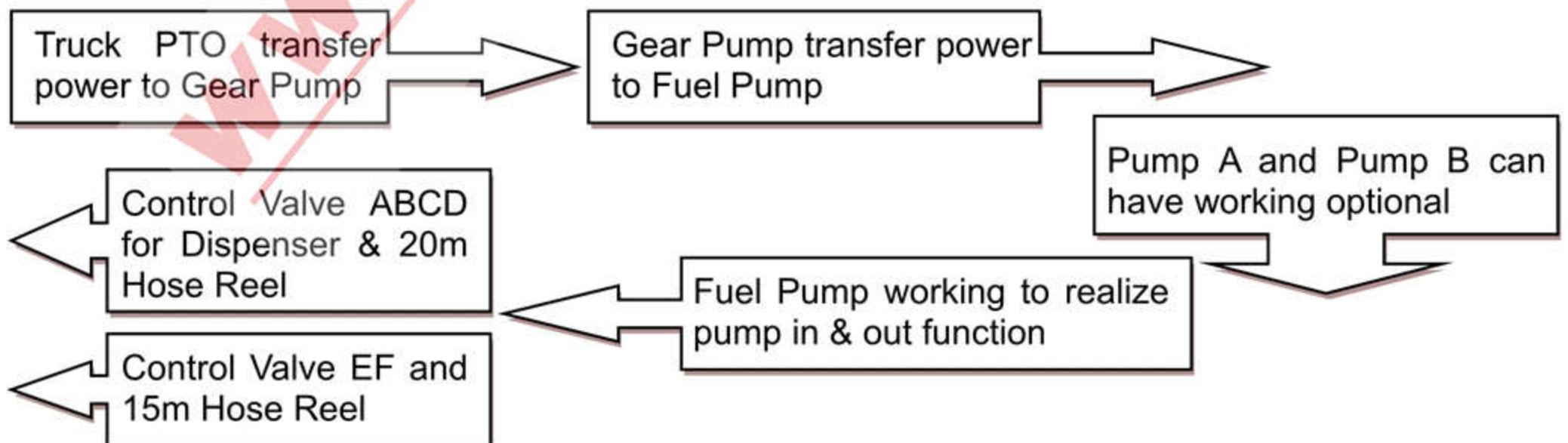
ii ,Fuel Pipeline Structure Components

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.

At the rear of the fuel tanker which installed two sets Refueling Machine and 20m Hose Reel, and on driver side of the tanker equipped Fuel inlet & outlet valves (Pipeline system as below):



Simple working principle guidance:



Chapter 5, Fuel Tanker Truck Working Principles

The operator should fully understand Whole Structure and Working Principle for HOWO 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 HOWO 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 dispenser and 20m 1" hose reel with gun, also 15m 2" hose reel 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 HOWO 6x4 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.



PTO Button
TURN RIGHT: Working Position
TURN FRONT: Driving Position



PTO Alarm
When PTO button engaged, this equipment start alarm

Pump A / 1# Button
PULL OUT: Working Position
PUSH IN: Driving Position

Pump B / 2# Button
PULL OUT: Working Position
PUSH IN: Driving Position

**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 TURN RIGHT the PTO Button

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

- 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:

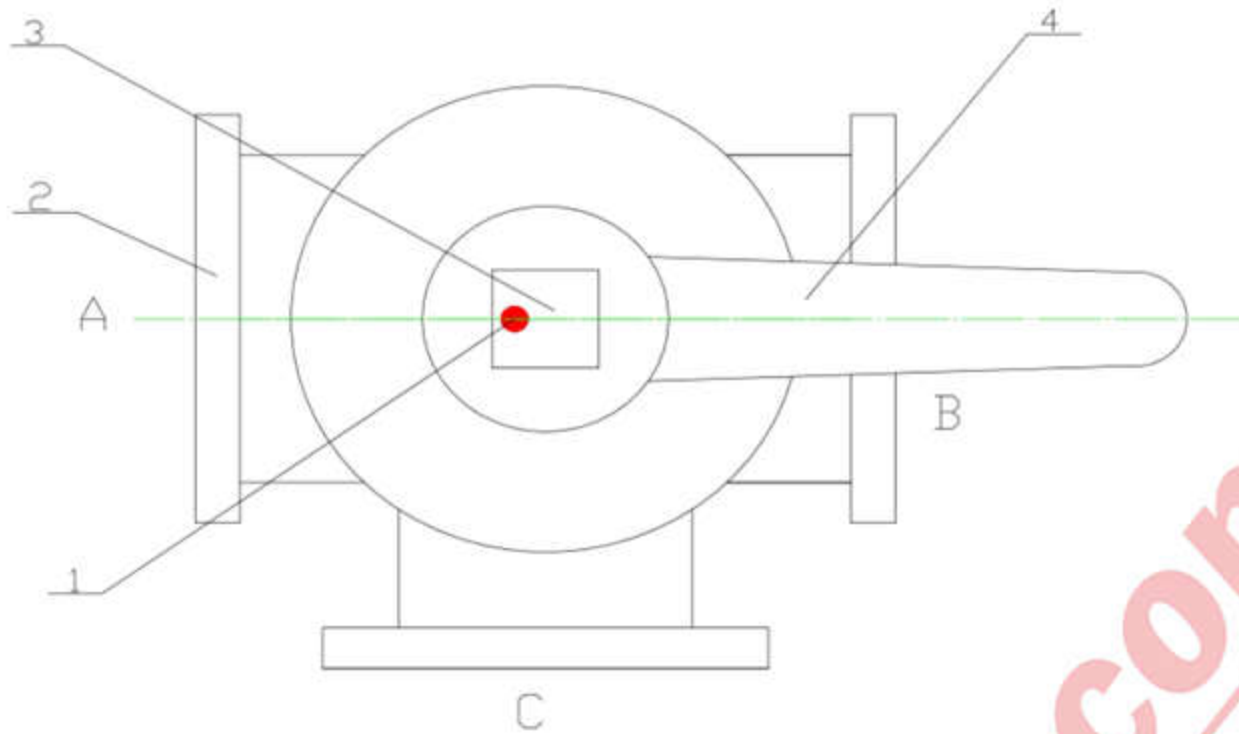
- **Fuel Truck Pipeline System:** There are mainly below 4 parts for fuel truck pipeline system. (Rear system based on truck component)

Fuel hose and gun: Consists of Fuel inlet & out valve, 20m 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

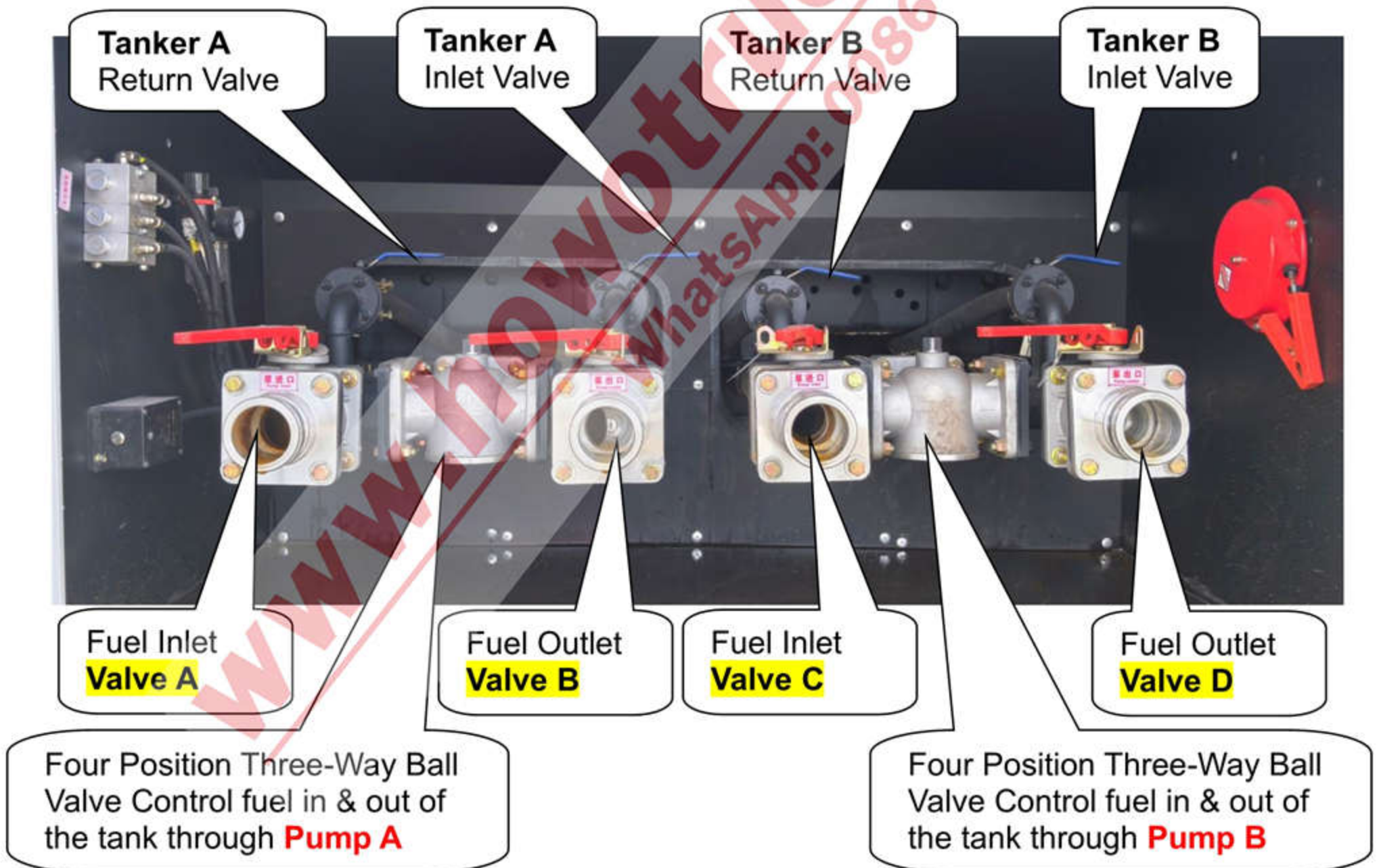
Fuel Pipeline: Multiply fuel pipeline service for fuel transportation



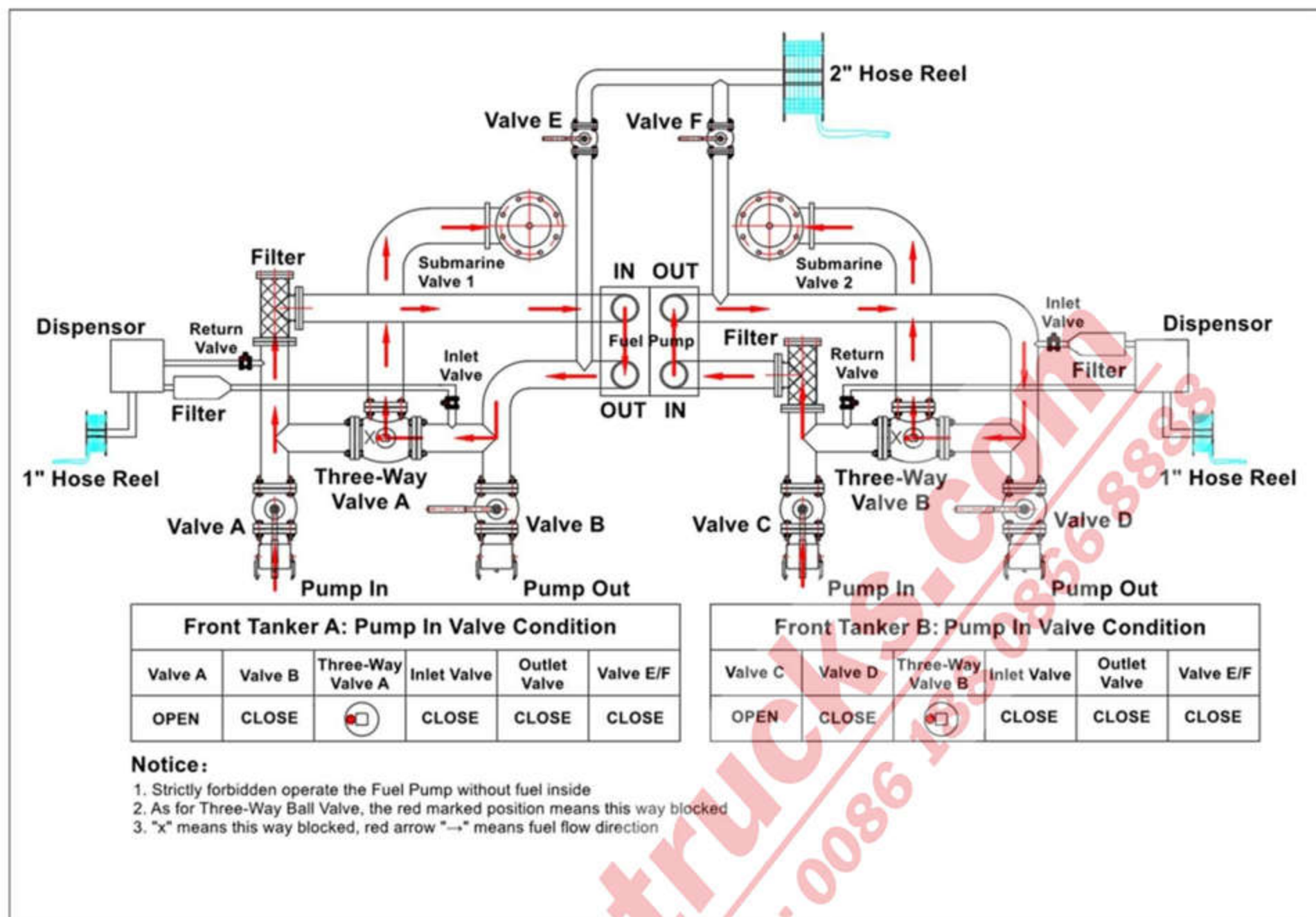
(1-Red Point 2-Valve 3-Valve Rod 4-Joystick)

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

Details as below: Tanker A and Tanker B can be controlled and used separately



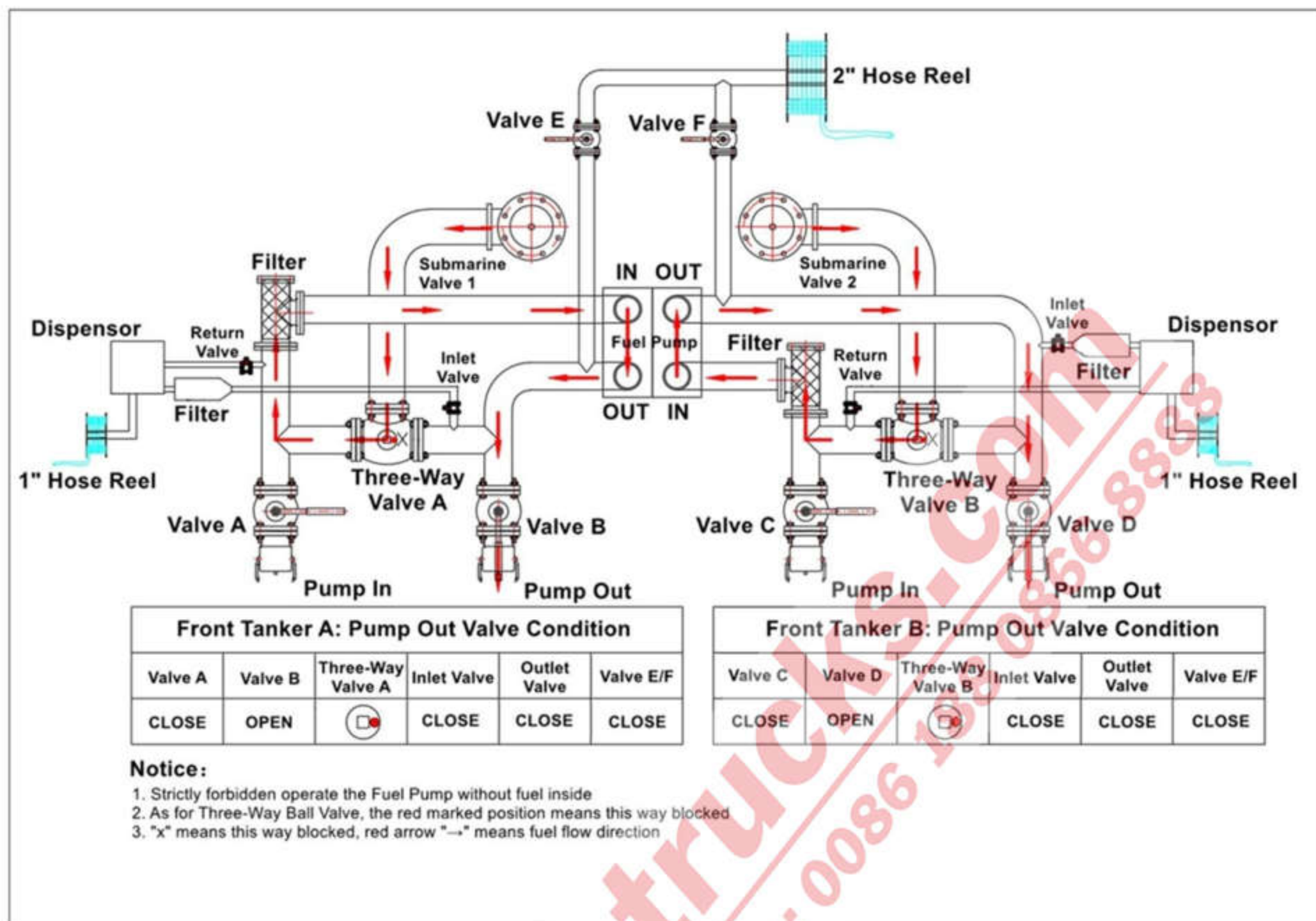
Tanker A and Tanker B can be controlled for working separately



➤ **The Schedule of Tanker A & Tanker B Pump In Working Process:**

Front Tanker A: Pump In Process -----In cabin Pump A / 1# button ON, turn on the PTO button. Fuel pipeline one side connect with **Valve A** and other side connect with oil source, make sure the **Fuel Outlet Valve B** closed; **Fuel Inlet Valve A** open, close **Valve E**, the **Four Position Three-Way Ball Valve A** left side closed, close the **Refueling Machine Inlet Valve & Return Valve** (which connect the Refueling Dispenser & 20m Fuel Hose Gun), make sure the **Submarine Valve 1** open. Then oil sucked into the pump through **Fuel Inlet Valve A** under negative pressure of fuel pump, then into the fuel tank.

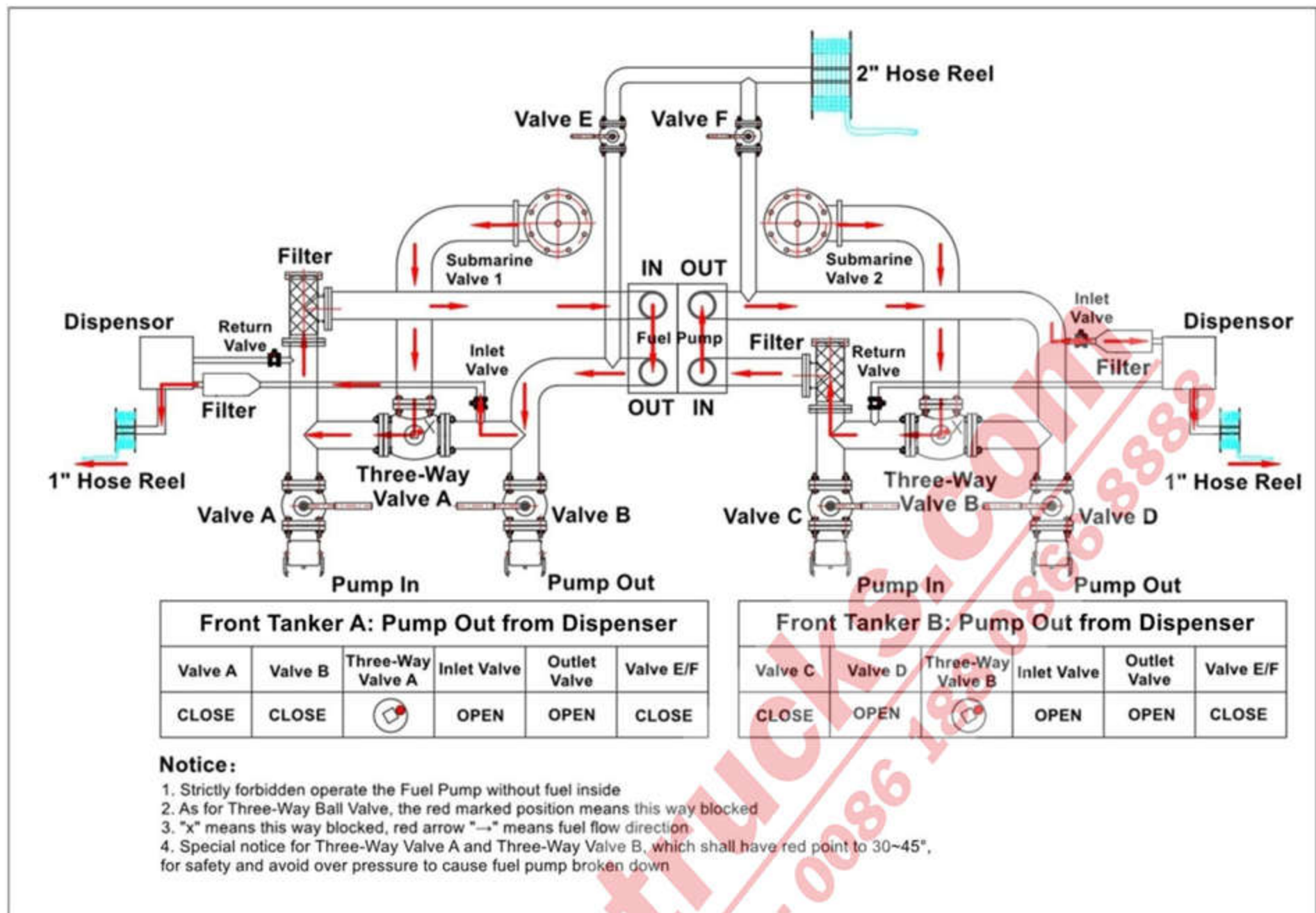
Front Tanker B: Pump In Process -----In cabin Pump B / 2# button ON, turn on the PTO button. Fuel pipeline one side connect with **Valve C** and other side connect with oil source, make sure the **Fuel Outlet Valve D** closed; **Fuel Inlet Valve C** open, close **Valve F**, the **Four Position Three-Way Ball Valve** left side closed, close the **Refueling Machine Inlet Valve & Return Valve** (which connect the Refueling Dispenser & 20m Fuel Hose Gun), make sure the **Submarine Valve 2** open. Then oil sucked into the pump through **Fuel Inlet Valve C** under negative pressure of fuel pump, then into the fuel tank.



➤ **The Schedule of Tanker A & Tanker B Pump Out Working Process:**

Front Tanker A: Pump Out Process -----Make sure the **Fuel Outlet Valve B** open; **Fuel Inlet Valve A** closed, close **Valve E**, the **Four Position Three-Way Ball Valve** right side closed, close the **Refueling Machine Inlet Valve & Return Valve** (which connect the Refueling Dispenser & 20m Fuel Hose Gun), open the **Submarine Valve 1**. Then oil pumping-out the fuel pump through **Submarine Valve 1** under negative pressure of fuel pump, then out of the fuel tank through **Fuel Outlet Valve B** (Pipeline can be connect with Valve B for discharge).

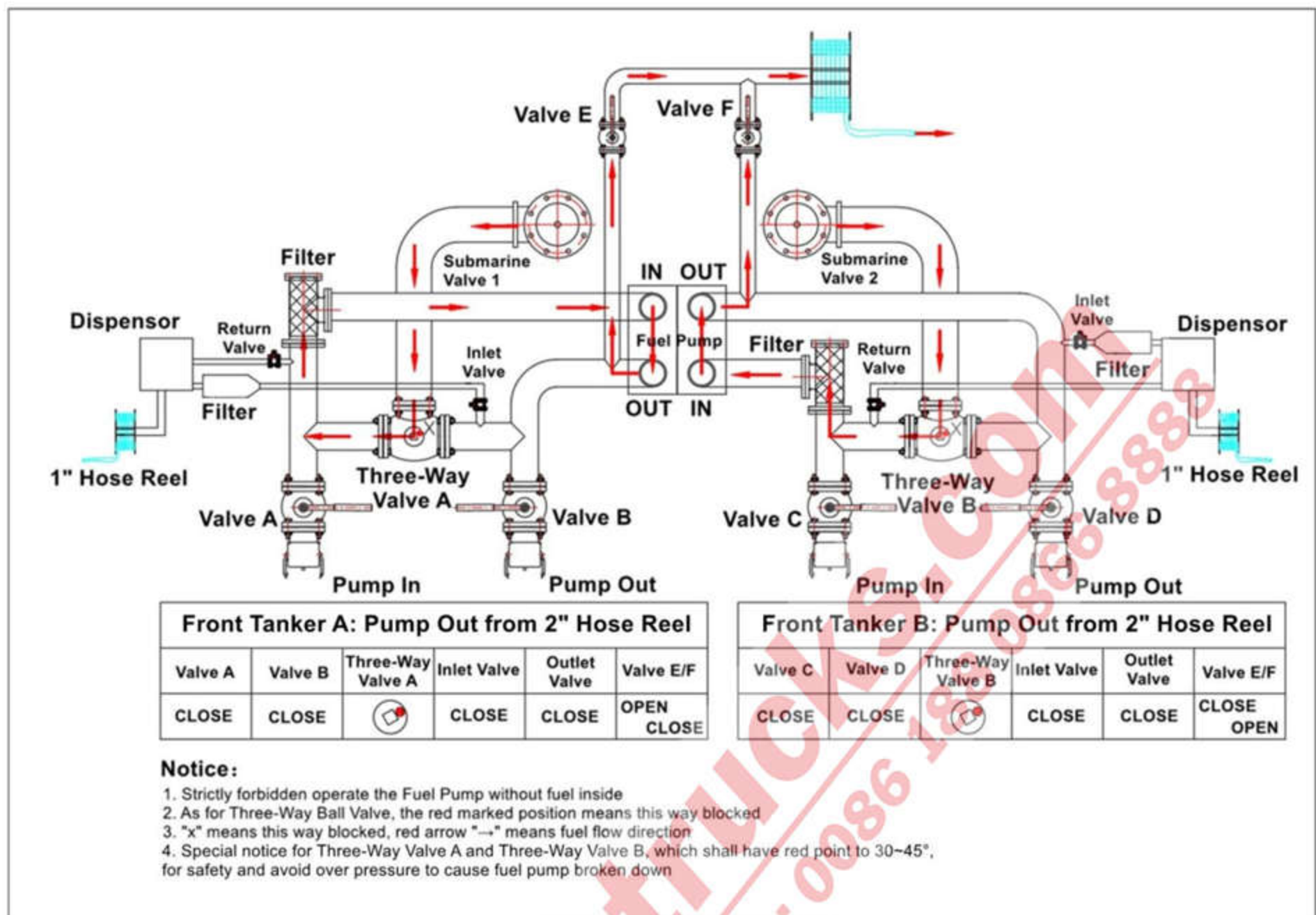
Front Tanker B: Pump Out Process -----Make sure the **Fuel Outlet Valve D** open; **Fuel Inlet Valve C** closed, close **Valve F**, the **Four Position Three-Way Ball Valve** right side closed, close the **Refueling Machine Inlet Valve & Return Valve** (which connect the Refueling Dispenser & 20m Fuel Hose Gun), open the **Submarine Valve 2**. Then oil pumping-out the fuel pump through **Submarine Valve 2** under negative pressure of fuel pump, then out of the fuel tank through **Fuel Outlet Valve D** (Pipeline can be connect with Valve B for discharge).



➤ **The Schedule of Refueling Process from Fuel Dispenser and 20m 1" hose reel:**

Front Tanker A: Pump Out from Fuel Dispenser Process -----Make sure the **Fuel Outlet Valve B** closed; **Fuel Inlet Valve A** closed, close **Valve E**, **Three-Way Ball Valve** point to right side 30° ~45° (Which can efficiently release fuel pressure), open the **Refueling Machine Inlet Valve & Return Valve** (which connect the Refueling Dispenser & 20m Fuel Hose Gun), open the **Submarine Valve 1**. Then oil can be pumping-into the left side fuel dispenser and 20m 1" hose reel under pressure of fuel pump. Then you can operate the gun to refuel all trucks.

Front Tanker B: Pump Out from Fuel Dispenser Process -----Make sure the **Fuel Outlet Valve D** closed; **Fuel Inlet Valve C** closed, close **Valve F**, **Three-Way Ball Valve** point to right side 30° ~45° (Which can efficiently release fuel pressure), open the **Refueling Machine Inlet Valve & Return Valve** (which connect the Refueling Dispenser & 20m Fuel Hose Gun),, open the **Submarine Valve 2**. Then oil can be pumping-into the left side fuel dispenser and 20m 1" hose reel under pressure of fuel pump. Then you can operate the gun to refuel all trucks.



➤ **The Schedule of Refueling Process from 15m 2" hose reel:**

Front Tanker A: Pump Out from 2" Hose Reel Process -----Make sure the **Fuel Outlet Valve B** closed; **Fuel Inlet Valve A** closed, **Three-Way Ball Valve** point to right side 30° ~45° (Which can efficiently release fuel pressure), close the **Refueling Machine Inlet Valve & Return Valve** (which connect the Refueling Dispenser & 20m Fuel Hose Gun), open the **Submarine Valve 1**. Open **Valve E**, then oil can be pumping-into the 15m 2" hose reel under pressure of fuel pump. Then you can operate the gun to refuel all trucks.

Front Tanker B: Pump Out from 2" Hose Reel Process -----Make sure the **Fuel Outlet Valve D** closed; **Fuel Inlet Valve C** closed, **Three-Way Ball Valve** point to right side 30° ~45° (Which can efficiently release fuel pressure), close the **Refueling Machine Inlet Valve & Return Valve** (which connect the Refueling Dispenser & 20m Fuel Hose Gun),, open the **Submarine Valve 2**. Open **Valve F**, then oil can be pumping-into the 15m 2" hose reel under pressure of fuel pump. Then you can operate the gun to refuel all trucks.

Chapter 6, Others for Attention

After carefully reading the above information, you must be well known how to use the HOWO 6x4 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.

iii, Spare Parts List

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