POWERSTAR TRUCKS INDUSTY CO., LIMITED

POWERSTAR Fuel Tanker Truck

User's Manual

POWERSTAR TRUCKS INDUSTRY CO., LIMITED

http://www.isuzutruckscn.com/

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.

----POWERSTAR TRUCKS

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Chapter 1. General Description

*POWERSTAR TRUCKS Fuel Tanker Truck based on type II ISUZU 4*2 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 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, original FTR 4x2 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 12CBM and safety enough to transport & refueling oil based on customer requirement.

The ISUZU FTR 4x2 Fuel Tanker Truck equipped with famous China brand fuel pump, rear climbing ladder, 2 sets Euro standard Manhole, top & side & rear guard plate, safety fuel inlet & outlet valves, one set refueling machine with 25m hose reel with digital flowmeter, 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 FTR 12,000L Fuel Tanker Truck)

Chapter 2, Main Technical Data

Basic parameter:

Items		12,000L ISUZU Fuel Tanker Truck
SIZE	Outer Dimension（L×W×H）(mm)	7500*2500*3000
	Wheelbase (mm)	4500
Kerb Weight（kg）		7500
GEAR	Gearbox brand	ISUZU MLD
	Model	6-shift gearbox
	Type	Manual
Cab capacity（includes driver）		2
ENGIN	Brand	ISUZU
	Model	4HK1-TC50
	Type	Four cylinder inline, four stroke, water-cool, turbocharged Inter-cooling, diesel
	Rating Power（kW/HP）	150 / 205

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+6000
	Material		Standard Carbon Steel
	Painting	Internal	With anti-rust painting
		External	White painting with Customized Logos
	Special Equipment	Refueling Machine	Durable machine with 25m 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		Fuel Pump 80YHCB-60
	Fuel Flow Rate (m^3 /h)		80
	Working Pressure (MPa)		0.6
	Revolving Speed (r/min)		960
	Rated Power (kw)		7.5

Chapter 3, 80YHCB-60 Fuel Pump

Brief introduction of 80YHCB-60 fuel pump:

ISUZU fuel tanker truck use TOP Chinese brand Fuel Pump and pump model is 80YHCB-60. 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 80YHCB-60 model fuel pump:

Fuel Pump	Model	**80YHCB-60**
	Fuel Flow Rate (m^3 /h)	**60**
	Working Pressure (MPa)	**0.6**
	Revolving Speed (r/min)	**960**
	Rated Power (kw)	**7.5**
	Vacuum Height (m)	**6**
	Self Suction Time (m/min)	**5**

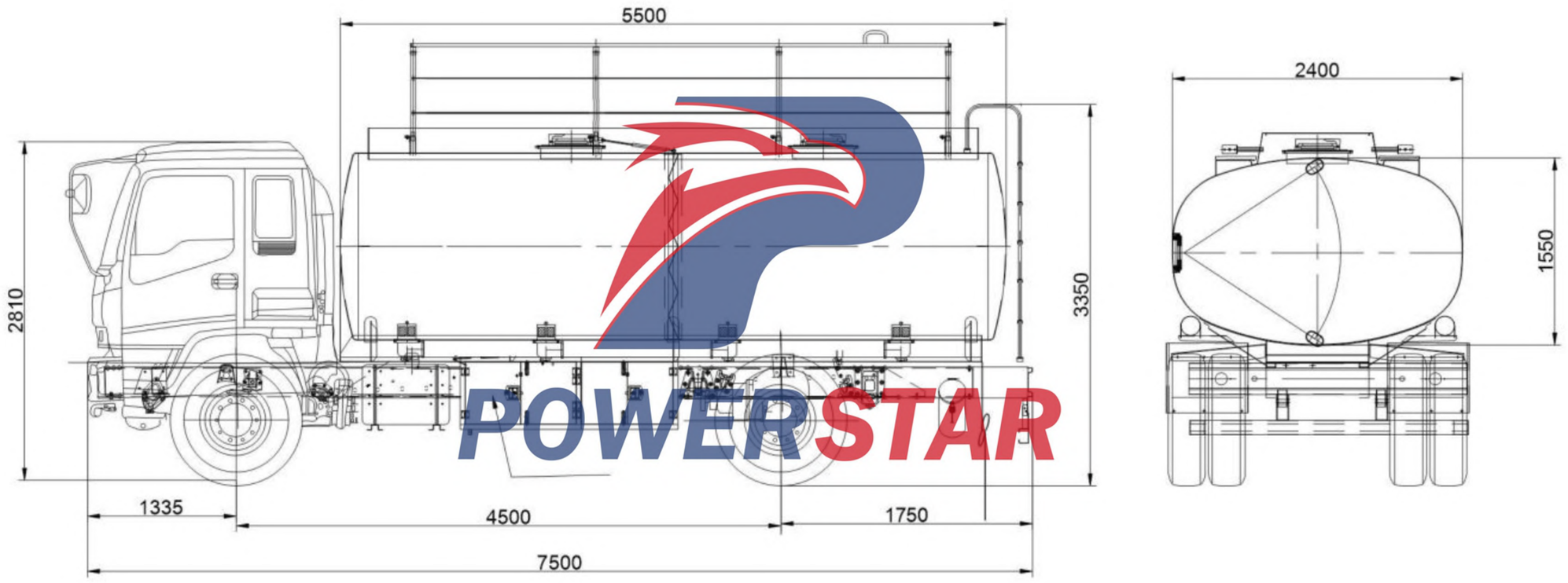
How to Installation & Maintenance 80YHCB-60 combined fuel pump:

Items	Notification	
1	Usage	1. Installed on Fuel Tanker Truck 2. Installed on Fuel Storage House
2	What need to pay attention while installed on fuel tanker truck	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 0.6MPa
3	Before start working	1. Test the shaft valve direction of rotation 2. Test the Fittings and Flange sealing 3. Test all valves
4	Cleaning suggestion	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	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

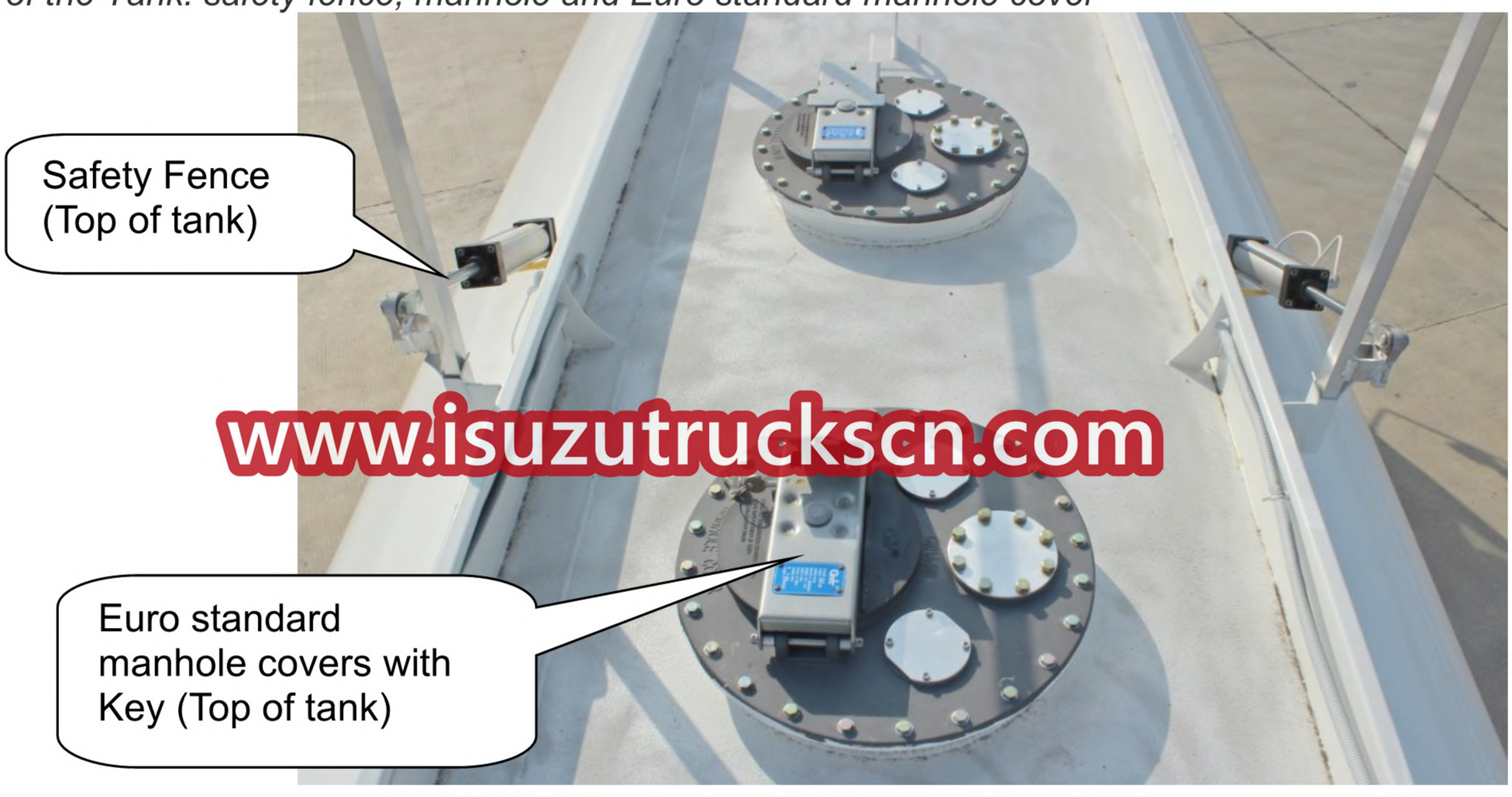
i ,Fuel Tanker Structure Components

Overview for ISUZU fuel tanker truck technical drawing:

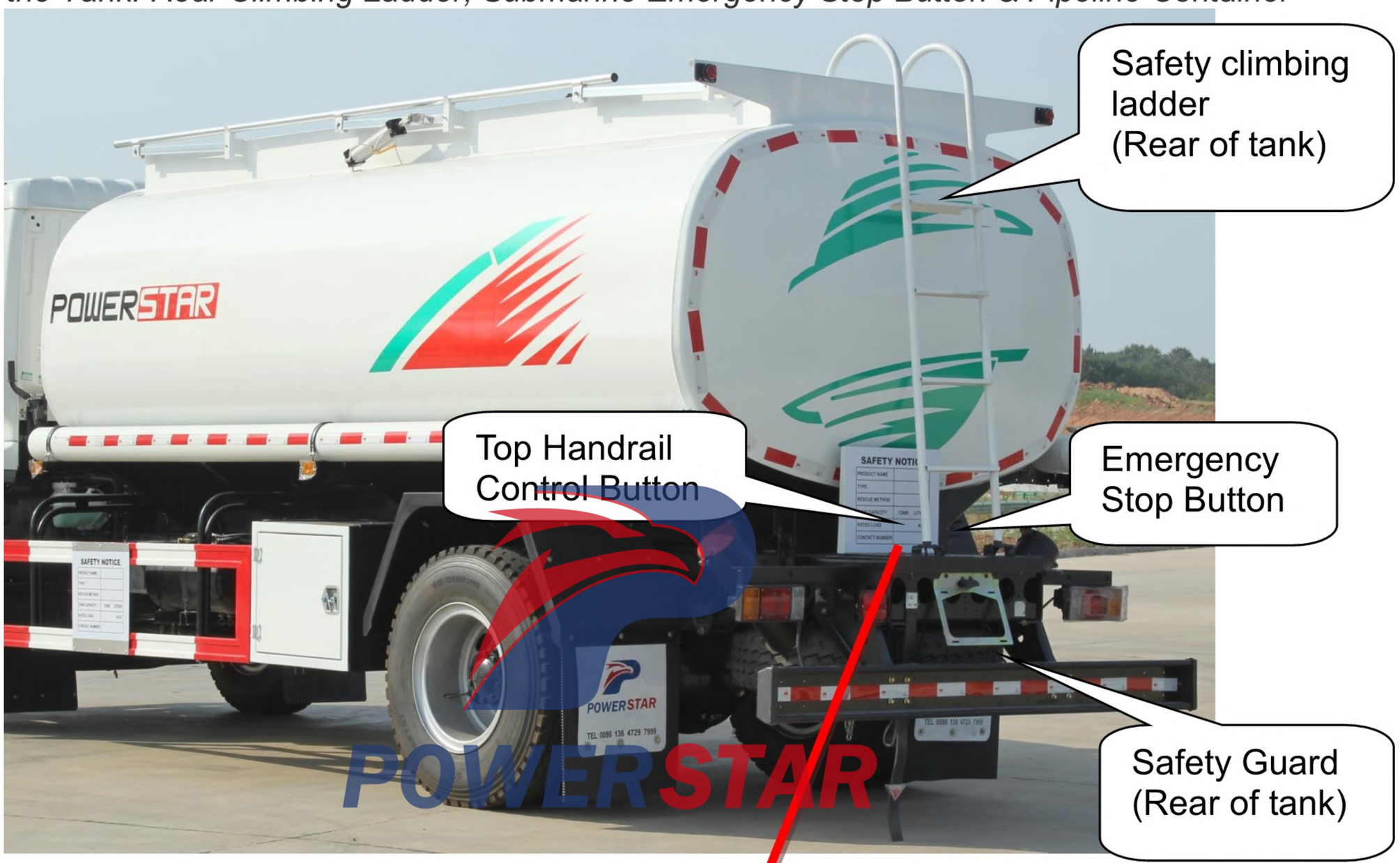


Above drawing show that there are safety-guards at two sides & rear; at passenger side of tank installed the Pump In & Pump Out valves, also flowmeter and matchable 25m hose reel and gun; on top of tank equipped two Euro standard Manholes, also aisle and handrail on two sides; at rear of the tank equipped climbing ladder. The whole fuel tank is oval shape, separated two tanks 6000Liters + 6000Liters:

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



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



Top Handrail Control Button

Pull Out: Top Handrail lifting up for working

Push In: Top Handrail falling down

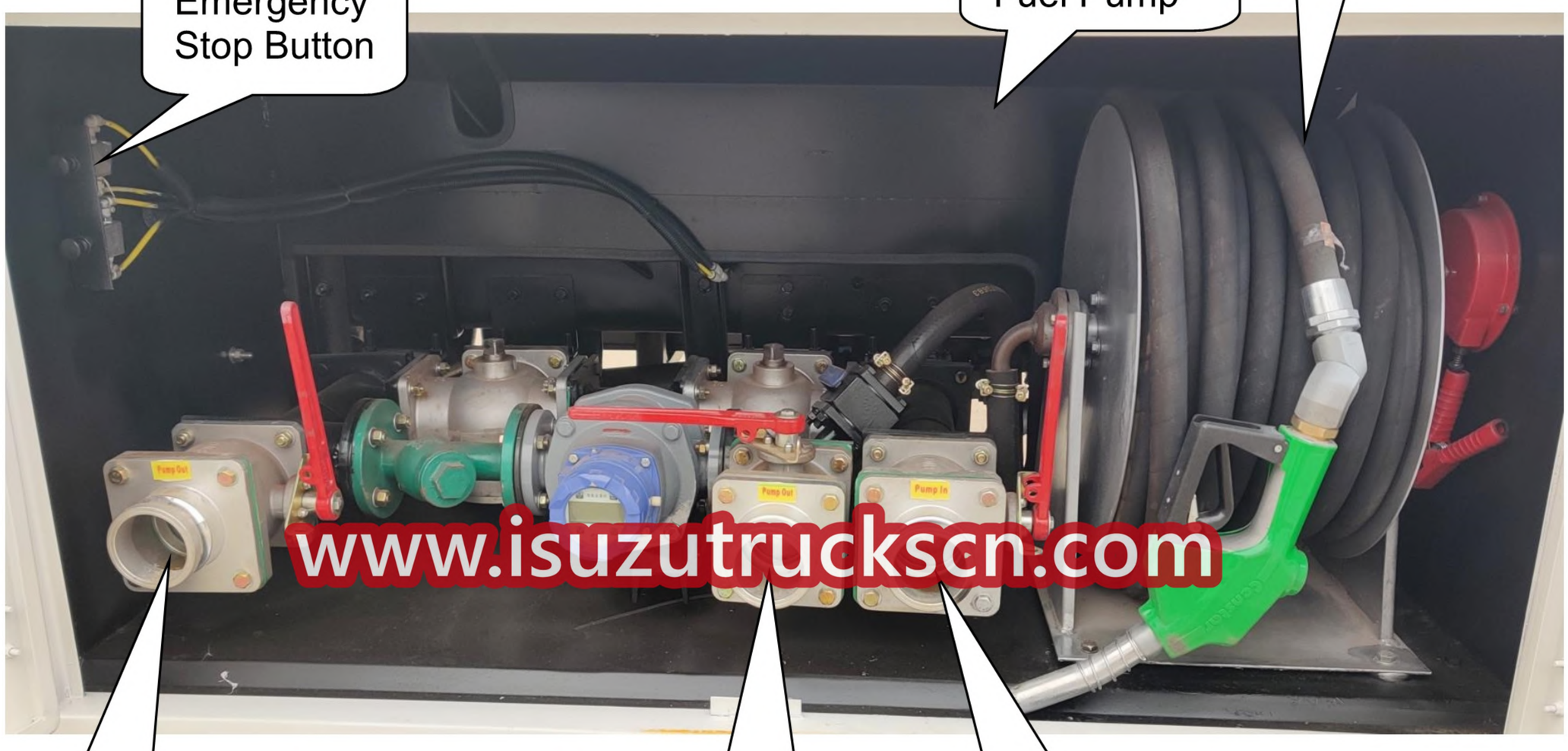
Emergency Stop Button

Push In: when have emergence, can make the whole truck stop working

Pull Out: Ready to work

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

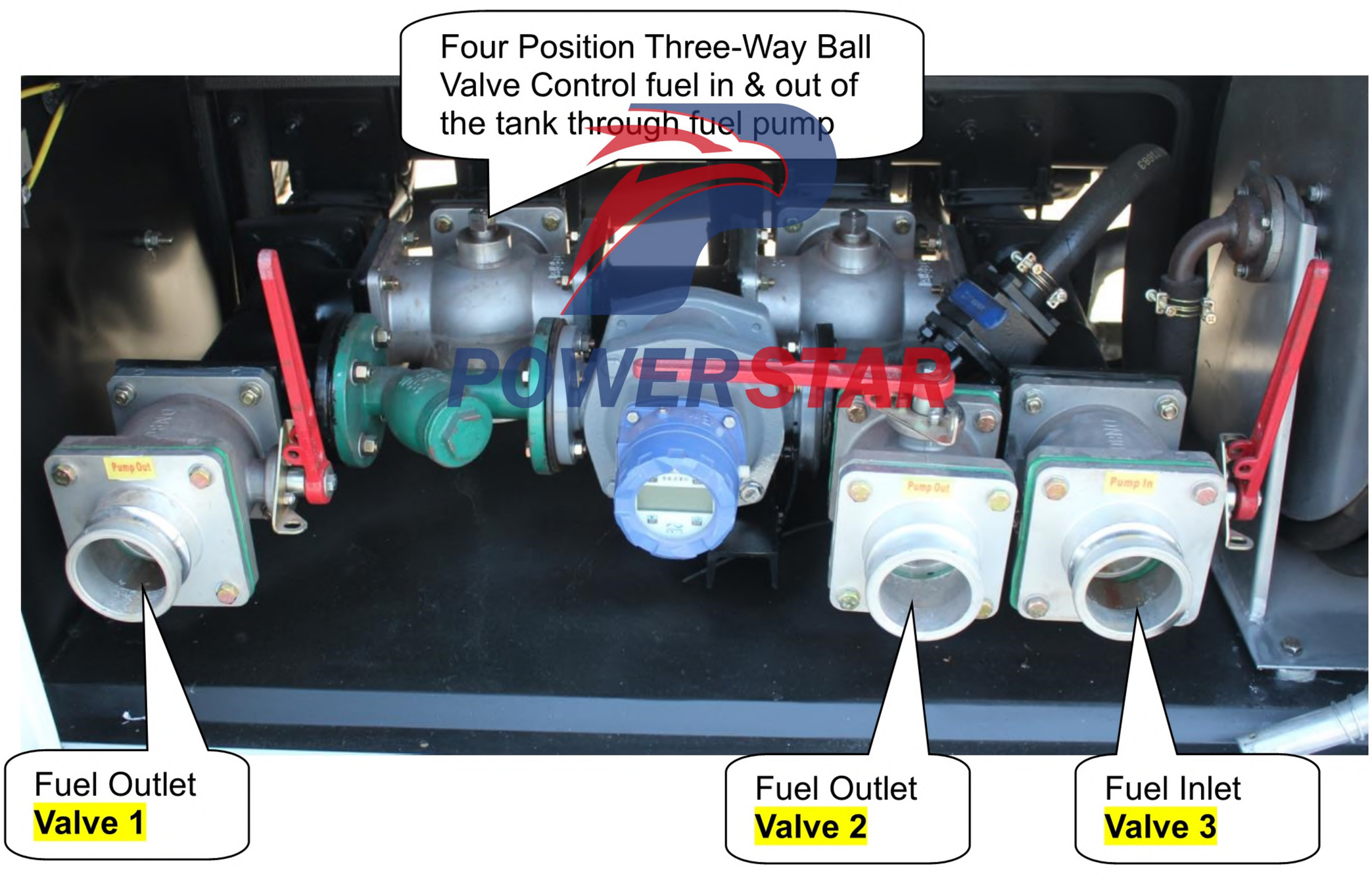
Driver's side of the Tank: Tool Box & Fuel Valves



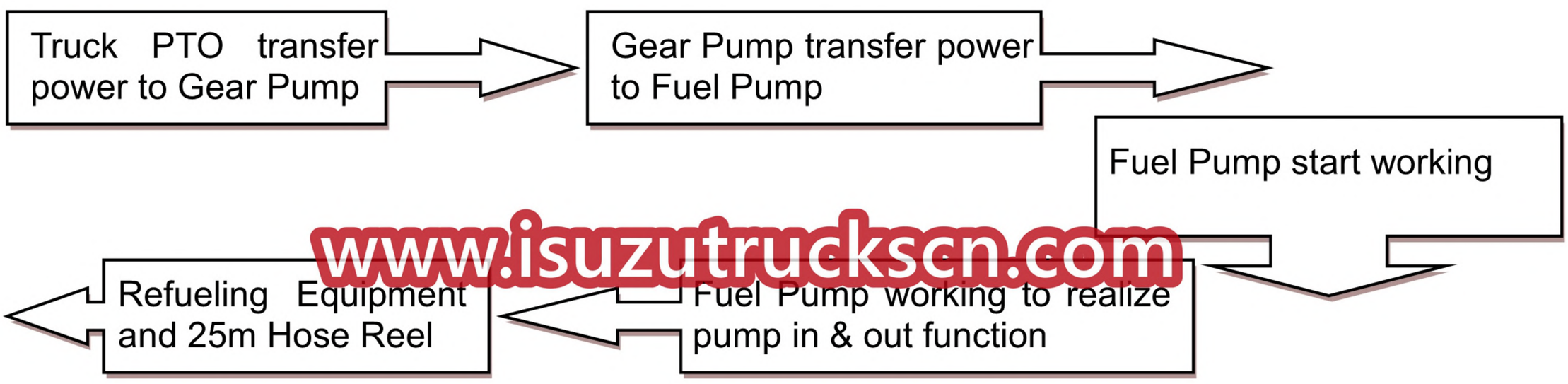
ii ,Fuel Pipeline Structure Components

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):

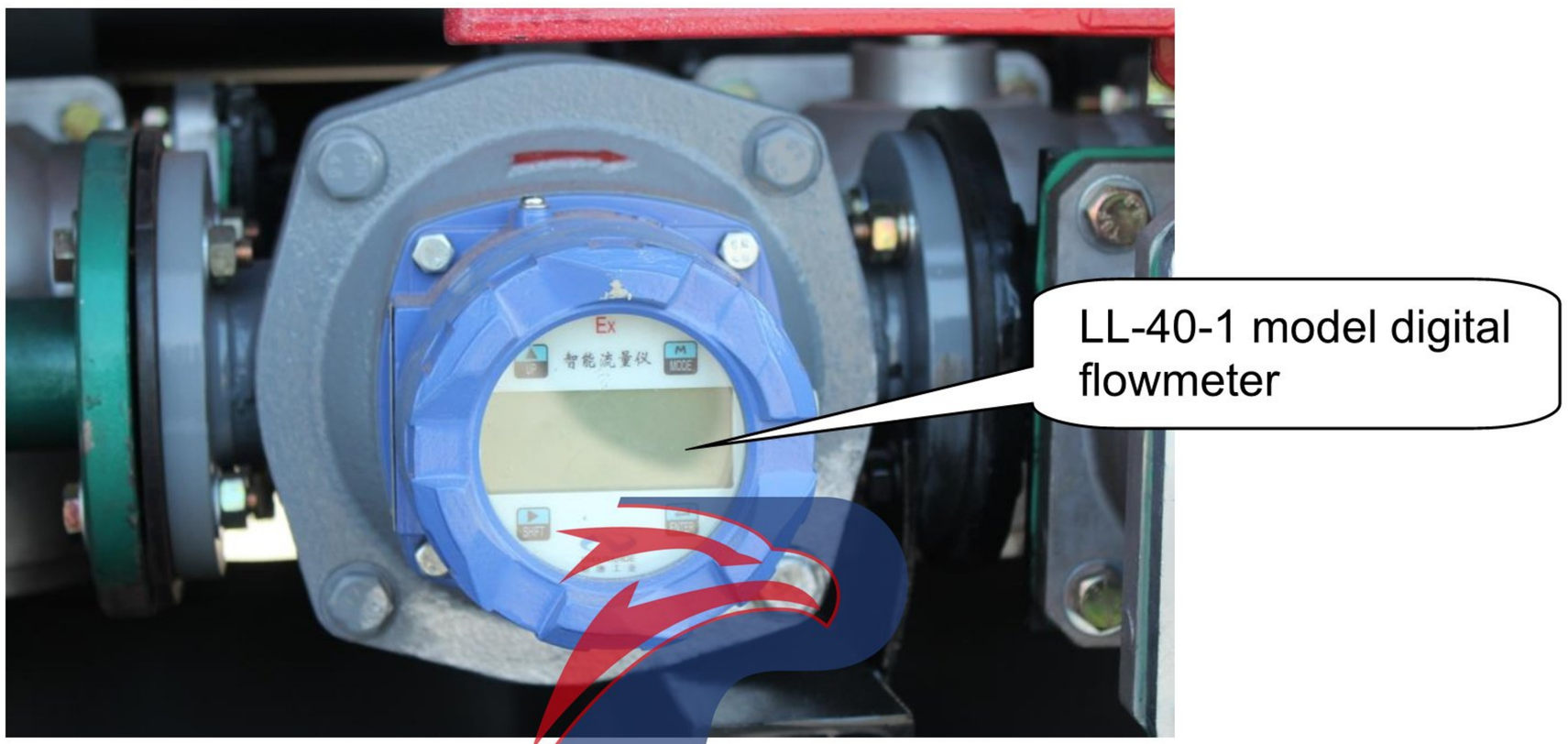


Simple working principle guidance:



iii, LL Model Digital Flowmeter

The ISUZU FTR fuel truck equipped LL-40-1 model digital flowmeter, which consist of outer shell, waist wheel, magnetic coupling, reducing mechanism, indicate parts.



Flowrate (m^3 /h)	3.2	6.4	16	/
Intrinsic Error	-0.07	0.03	0.16	/

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, pipelines, valves, joints, and 25m 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 equipment and 25m 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 original ISUZU 4x2 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)

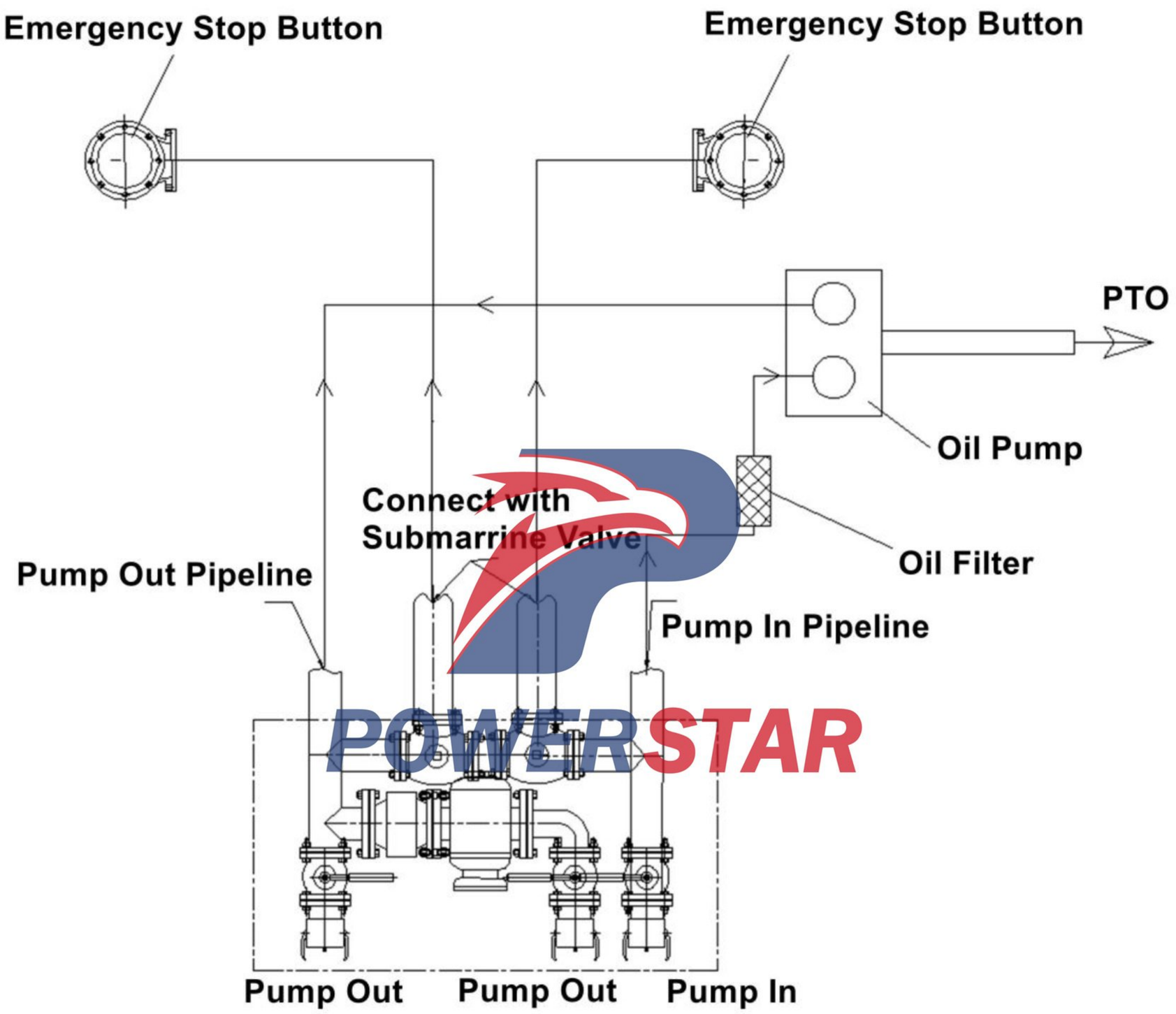
1、Start the truck engine, Press the clutch and make sure totally separated, Pull Out the Pump A or Pump B firstly, and then Pull Out the PTO button, the fuel truck start working.

Whole view for the ISUZU FTR fuel truck cabin

PTO 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.

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 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 at rear and inside of box, then the pump pipeline and the fuel tank is unblocked, and the oil can be Pump In & Pump Out of tank.*

c) *Special function operation showing as below, which mainly has following four functions:*

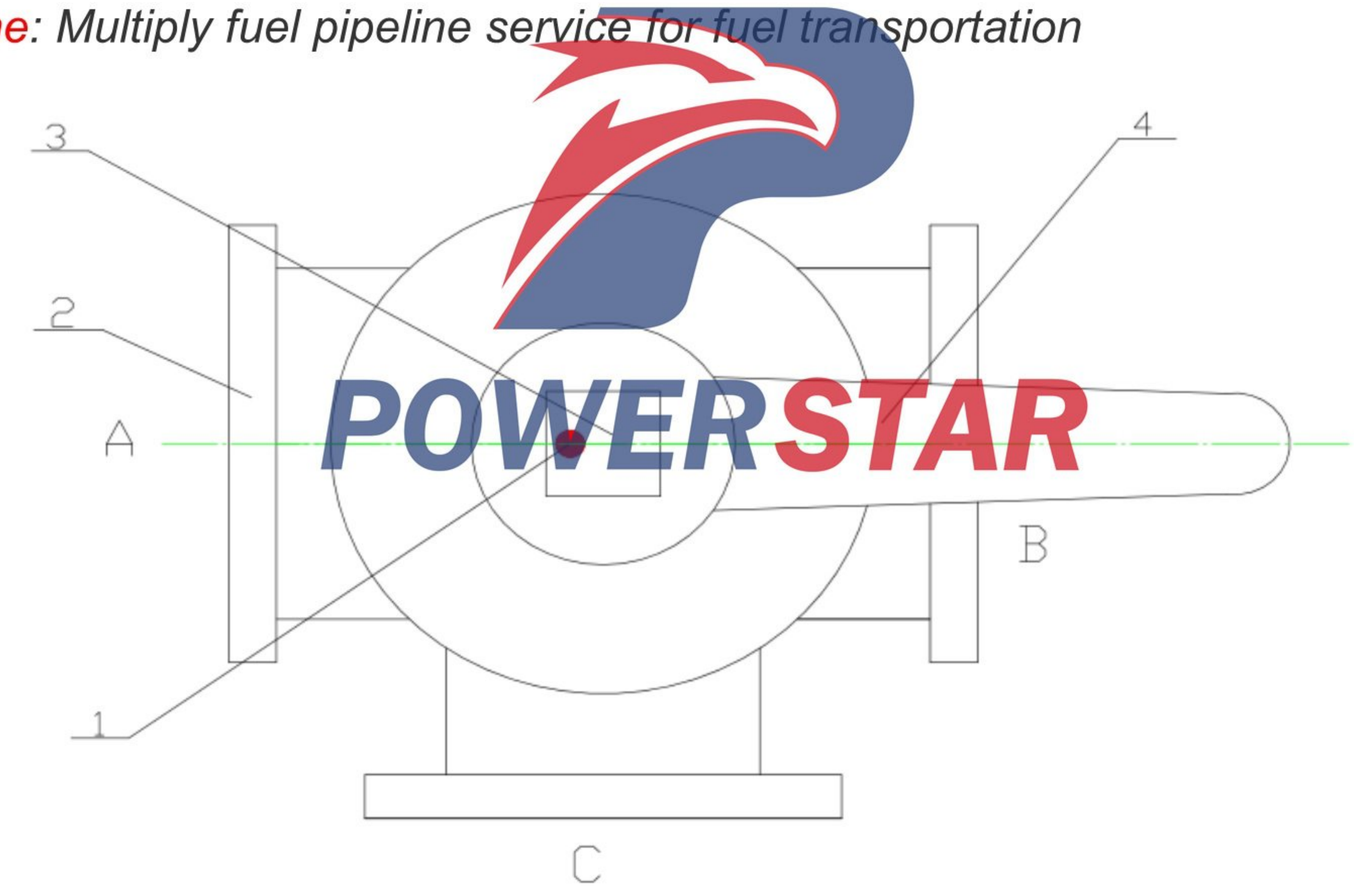
- ***Fuel Truck Pipeline System**: There are mainly below 4 parts for fuel truck pipeline system. (Rear system based on truck component)*

  Fuel hose and gun：Consists of Fuel inlet & out valve, 25m hose reel and Fuel gun

  Fuel Pump: 80YHCB-60 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

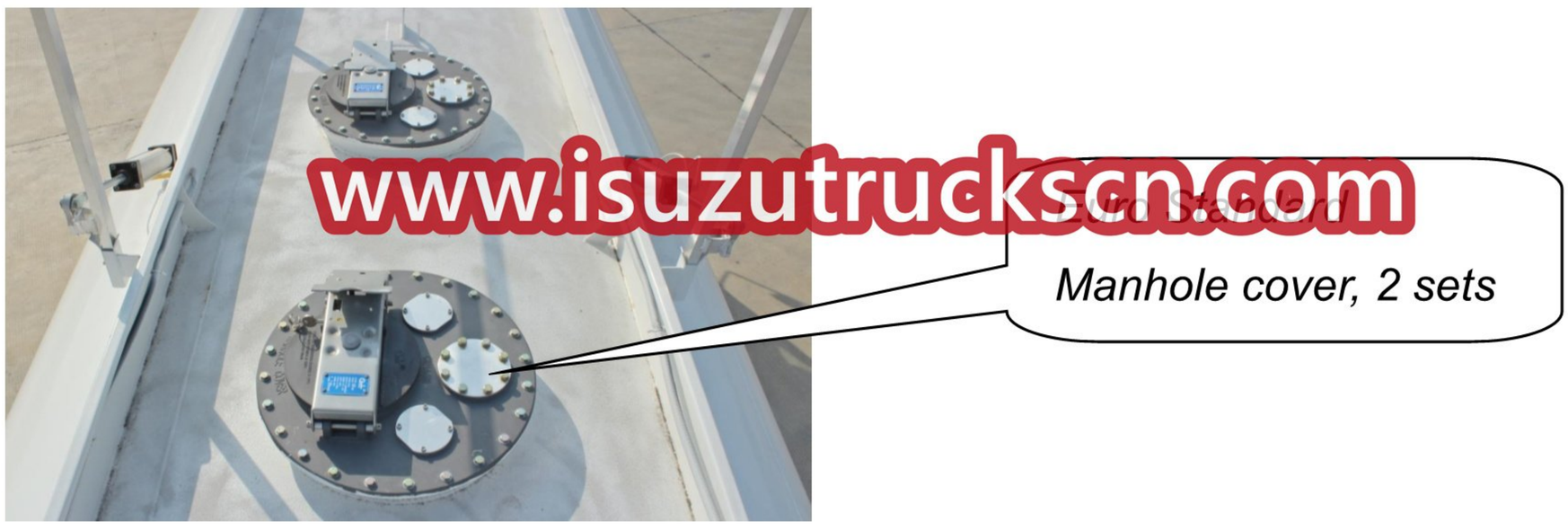
  Fuel Pipeline: Multiply fuel pipeline service for fuel transportation



(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)

d) *Below chart showing how to use the fuel bowser for fuel pump in, pump out & self-discharging by gravity: (Make sure the Manhole small door open during any operation)*



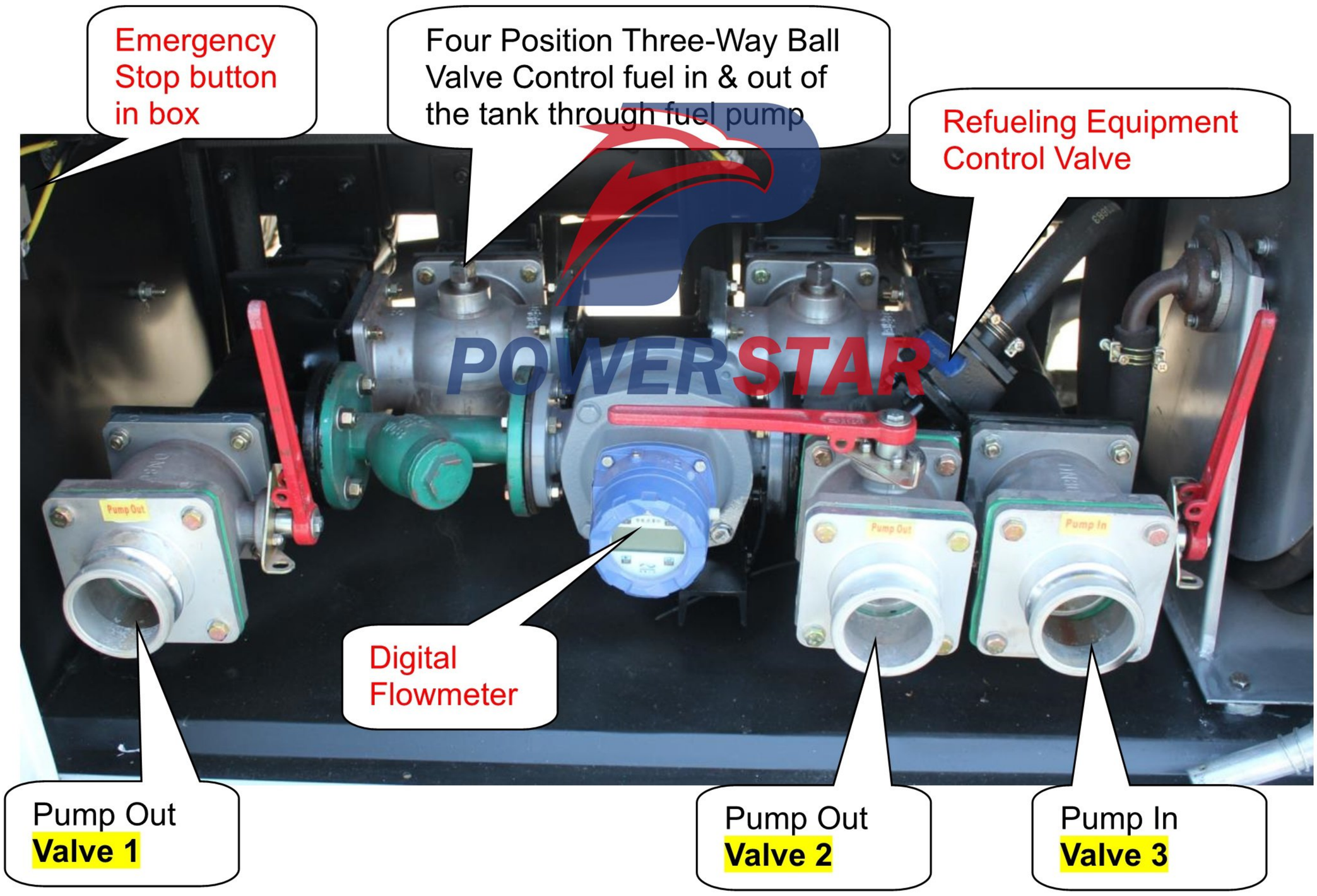
Make sure the Manhole small door open during any operation:

Pump-In Operation: Cause tank high pressure

Pump-Out Operation: Cause tank negative pressure

Self-Discharging Operation: not working because of negative pressure inside tank

Details refer to Page 11



The Four Position Three-Way Ball can decide which part of tank the fuel enter.

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

  *In cabin PTO button ON, Fuel pipeline one side connect with **Pump In Valve 3** and other side connect with oil source, make sure the **Pump Out Valve 1 & 2** closed; the **Four Position Three-Way Ball Valve** left side closed, close the **Refueling Equipment Control Valves** (which connect the Fuel Hose & Gun), make sure the **Submarine Emergency Valve** open**.** Then oil sucked into the pump through **Fuel Pump In Valve 3** under negative pressure of fuel pump, then into the fuel tank.*

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

  ***Through the Digital Flowmeter--**Make sure the **Fuel Pump Out Valve 2** open; **Fuel Pump Out Valve 1** and **Fuel Pump In Valve 3** closed, the **Four Position Three-Way Ball Valve** right side closed, close the **Refueling Equipment Control Valves** (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 Pump Out Valve 2**, the Digital Flowmeter can calculate the flow rate and quantity.*

  ***Not Through the Digital Flowmeter--** Make sure the **Fuel Pump Out Valve 1** open; **Fuel Pump Out Valve 2** and **Fuel Pump In Valve 3** closed, the **Four Position Three-Way Ball Valve** right side closed, close the **Refueling Equipment Control Valves** (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 Pump Out Valve 1**.*

- ***The Schedule of Refueling Course:***

  *Make sure the **Fuel Pump Out Valve 1 and 2** closed; **Fuel Pump In Valve 3** closed, **Three-Way Ball Valve** right side closed, open the **Refueling Equipment Control Valves** (which connect the Fuel Hose & Gun), open the **Submarine Emergency Valve.** Then oil can be pumping-into the 25m hose reel under pressure of fuel pump. Then you can operate the Fuel 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 ISUZU FTR 4x2 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	4m long Fuel Pipeline	2 units
2	Standard Tools for chassis	1 set
3	Three-Way Valve Wrench	2 unit