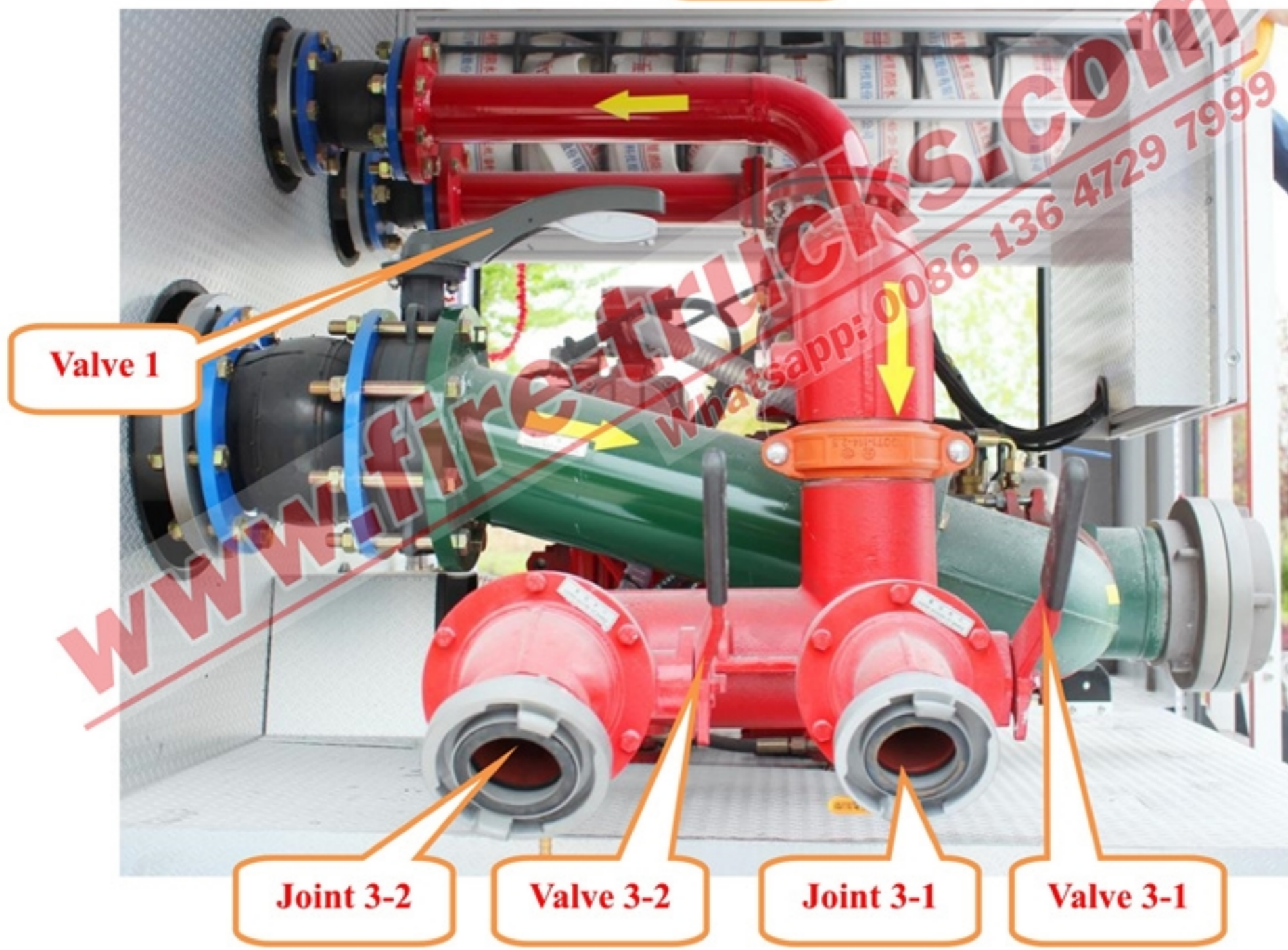
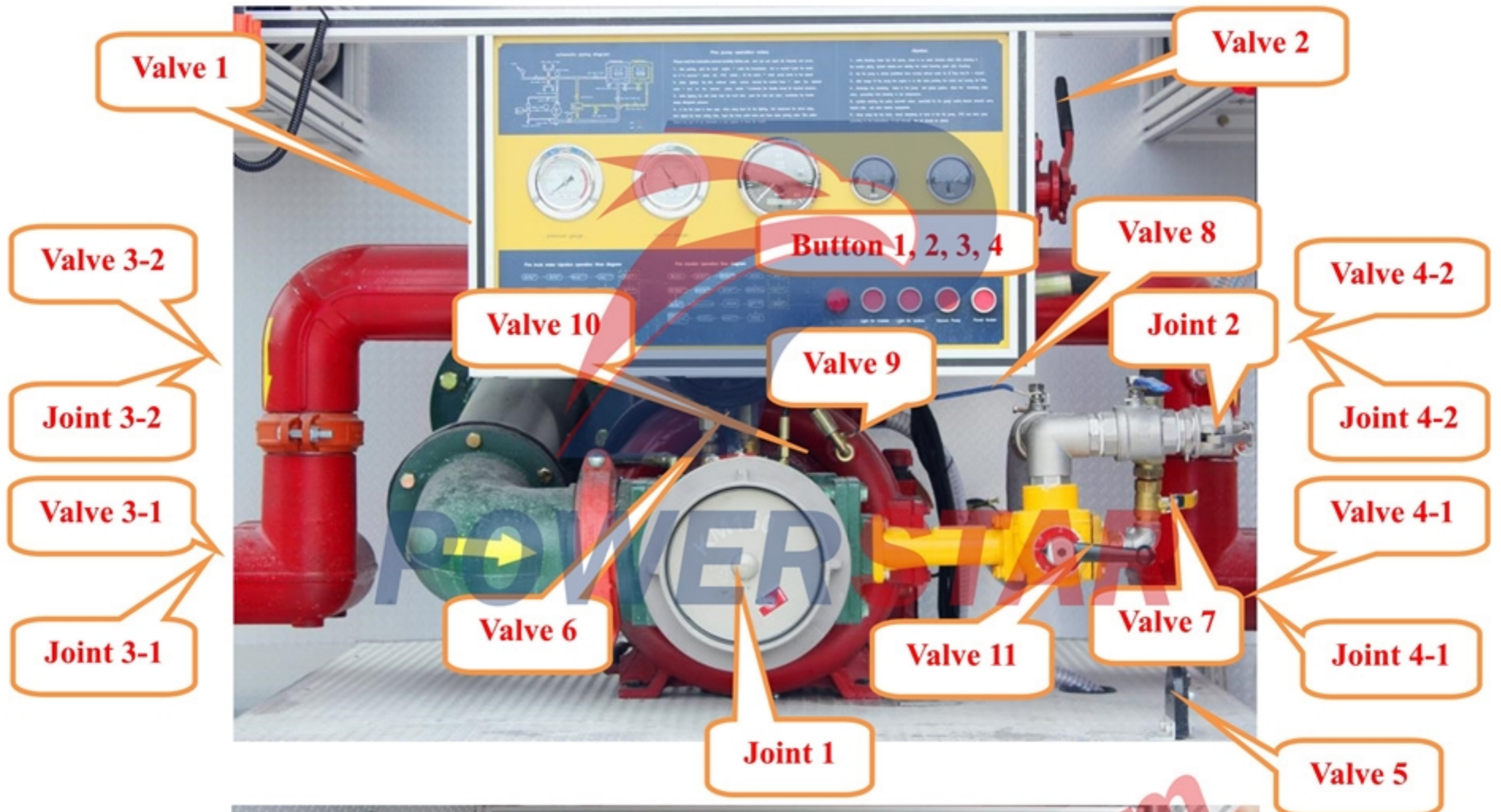
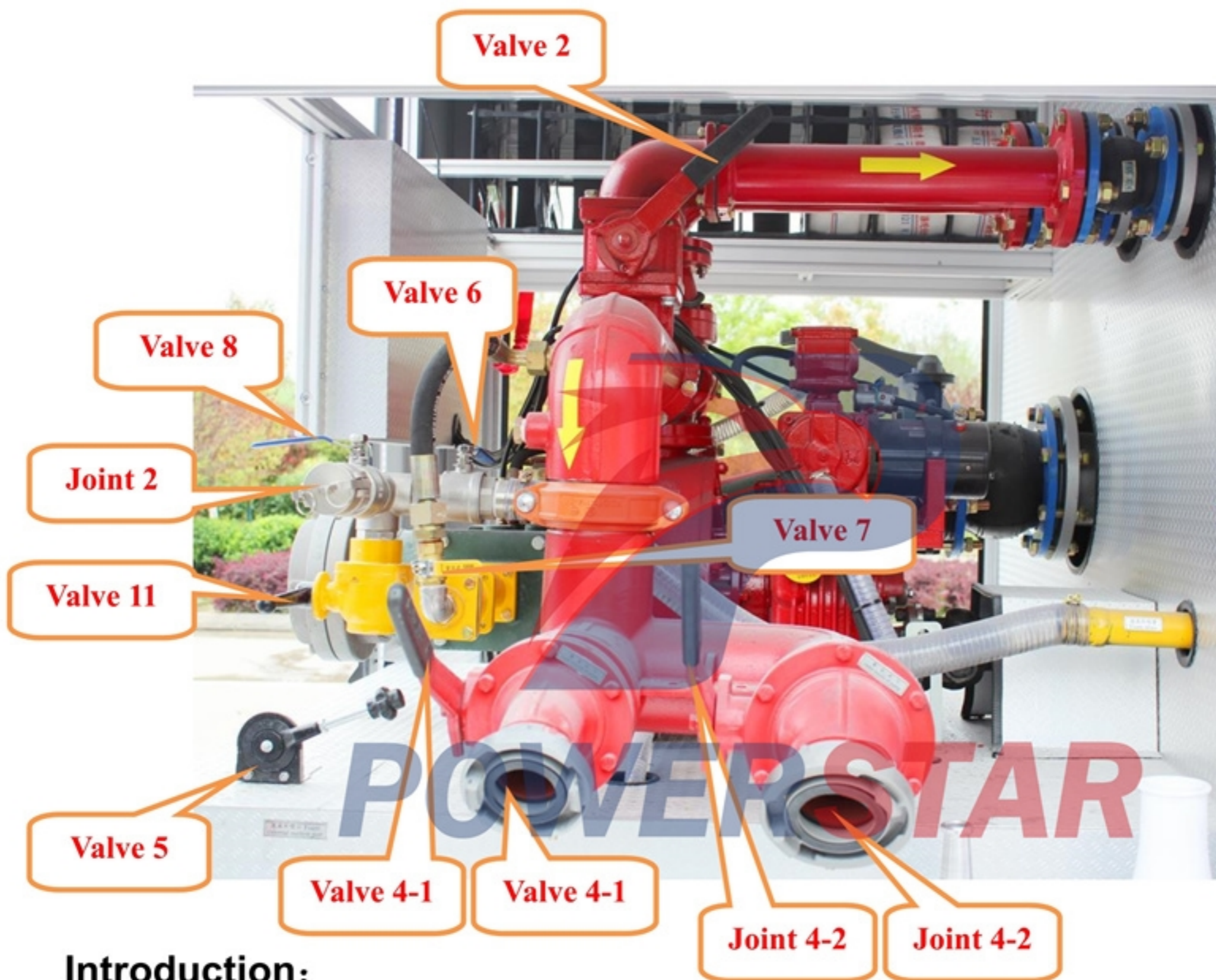


How to operate fire trucks? (Very Important)





Introduction:

- Valve 1: Main Valve: Water injecting to tank control Valve
- Valve 2: Water Inlet control Valve
- Valve 3: Fire pump water outlet Valve (3-1, 3-2)
- Valve 4: Fire pump water outlet Valve (4-1, 4-2)
- Valve 5: PTO accelerator control Valve
- Valve 6: Ball Valve of vacuum pump
- Valve 7: Tank foam outlet control Valve
- Valve 8: Tank foam outlet control Valve
- Valve 9: PTO Recirculating Water Valve (Please keep open)
- Valve 10: PTO Recirculating Water Valve (Please keep open)
- Valve 11: Water foam proportioner control Valve

- Joint 1: Water inlet Joint
- Joint 2: Foam pipeline Joint
- Joint 3: Fire pump water outlet Joint (3-1, 3-2)
- Joint 4: Fire pump water outlet Joint (4-1, 4-2)

Button 1, 2, 3, 4: Control the fire truck

Operation Steps:

1. Keep valves closed except valve 9 & 10, **Joint 1** connect with fire hydrant, river, pond, start the engine, control the PTO, Press **Button 4 & 3** turn on vacuum pump, open **Valve 6** till the pipeline has water, then turn off **Button 3**, open **Valve 2**, start injecting water into the tank
2. Only turn on the **Valve 1**, also the control valve (for fire monitor) on the top, start the engine, control the PTO, then the inside water can be sprayed from fire monitor at high speed, adjust the **Valve 5** which can make the spray faster and stronger.
3. Turn off **Joint 2**, turn on **Valve 7 & Valve 8**, adjust **Valve 2**, in order to adjust the blending ratio of water and foam, then spewed from fire monitor at high speed.(*inner foam & inner water*)
4. Turn on **Joint 2**, connecting the outer foam pipeline, turn on **Valve 8**, turn off **Valve 7**, and then can suction foam from outside into tank.
5. Turn on **Joint 2**, connecting the outer foam pipeline, turn on **Valve 7**, turn off **Valve 8** adjust **Valve 11**, in order to adjust the blending ratio of water and foam, then spewed from fire monitor at high speed.(*inner water & outer foam*)
6. **Joint 3 (3-1, 3-2), 4 (4-1, 4-2)** can connect with firefighting guns directly.



1. Fire pump operation instruction

In order to extinguish the fire quickly, it is necessary to operate the fire pump exactly and masterly

1. XIOGNZHEN CB10/60 operation instruction

a. Priming water:

If using water from tank, we can push the butterfly valve toward to the fire pump shaft direction in order to pull the pin out from pin-hole. Then pull the handle to horizontal position and open the butterfly valve, after that, water will be flowing into the pump.

If using water from hydrant, we can connect the suction pipe to the hydrant, and then the water will be flowing into the pump from the hydrant

If using water from pond, we need to use a piston primer pump for priming water. In this situation, firstly we can put the suction pipe into the pond; secondly start the low pressure fire pump; thirdly turn the pump rotational speed to 2500r/min in a short time; fourthly pull the control handle down and the piston primer pump begin to work. The water priming will be finished in 35 seconds, then the fire pump begin to work and the piston primer pump stop working automatically, after that ,we can push the control handle up to normal position, if the water priming are not finished in 60 seconds, please check whether there is air leakage in the system.

b. Low pressure work condition

Open the ball valve which is in the low pressure outlet, and then turn the reflux ball valve to "low pressure" position.

2. Water injection, suction and discharging

1. Two ways of injecting water into the tank:

(1) Water from hydrant

- A. After parking the vehicle according to correct steps, take out fire hose and hydrant wrench.
- B. Connect the outer injection joint to the hydrant with fire hose.
- C. Open the hydrant valve with hydrant wrench until the tank has been full.

Each side has two Injection Joints, connect with fire hydrant and water will jet into tank directly.



(2) Water from river and pond

A. After parking the vehicle according to correct steps, take out suction pipe, water-strainer and suction pipe wrench.

B. Connect the suction pipe to the inlet of the fire pump and make sure the length is suitable, then fix the water-strainer on the end of the suction pipe and put it into the river or pond (0.5m under water surface is best).

Notice:

- 1 Do not bend the suction pipe excessively.
- 2 Make sure the bending part not higher than the inlet of fire pump.
- 3 Do not make the water-strainer touch the bottom of pond or river to prevent sundries.
- 4 Make sure there is not air leakage at all joint, otherwise the water will not be primed
- 5 Turn off all valves, making the transmission in neutral. Start the engine, push the clutch, press the PTO switch, then release the clutch slowly until the fire pump runs.
- 6 Press the priming button, adjust the manual throttle simultaneously, making the rotation of pump around 2200r/min-2500r/min, get the vacuum gauge at around 0.5-0.8MPa.
- 7 After water getting in the pump, make the priming button back reset.
- 8 While the pressure gauge points at 0.25MPa open the water injection valve, adjust the manual throttle to the necessary pressure until the tank is full.

2. Water supplied by pump

Three water supply types:

1. Supply from tank
2. Supply from hydrant
3. Supply from river and pond

(1) Priming operation (Supply from tank):

Open the pipe valve between tank and fire pump, start fire pump, turn the hand throttle to make the rotational speed to rated speed. When the value of vacuum gauge is from 50Kpa to 80Kpa, open the outlet valve, then turn the hand throttle to proper pressure.

(2) Priming operation (Supply from hydrant):

a After parking the vehicle according to correct steps, take out fire hose, collecting breeching and hydrant wrench.

b Connect the outer injection joint to the hydrant with fire hose and collecting breeching

c Open the hydrant valve with hydrant wrench, when the water has been primed into the pump, the following steps are same as water supplied by tank situation.

(3) Priming operation (Supply from river and pond):

The operation steps are the same as water supplied by tank situation a to c.

3. Fire fighting

1). with water

After parking the vehicle according to correct steps, connect the fire hose and hose nozzle correctly, aim to the fire source, operate the clutch and PTO to make the pump start to work. Open vacuum gauge, pressure gauge and cooling system stopcock, check the indication of each gauge, and turn the hand throttle, when the pressure gauge indicates around 0.8Kpa to 1.0Kpa, open the outlet valve, then turn the hand throttle to proper pressure.

Note: Turn off the inlet valve while firefighting.

2). with foam

Water foam proportioner:

Fitted on the fire pump, composed of water pipe system, ball valve, inlet pipe, adjust valve, Y-branch, outlet soft pipe.

Working principle:

When the water with pressure gets into the nozzle through the pressure pipe, cock, then out of the nozzle, negative pressure will be formed inside the proportioner. The foam liquid in the foam tank is sucked into the proportioner through the liquid pipe, ball valve, the calibration hole of the control valve, mixing with the water inside. After the injection pipe, outlet pipe, bending pipe to the pump, the mixing liquid is mixing in pump again and then being pressurized, most of the mixing liquid is sent to the injecting equipment to inject as foam, and small part of it enters the proportioner for running circularly.

Firefighting with foam:

Two foam liquid supply:

1. Supply from the foam tank: The foam liquid, sucked by the proportioner from the foam tank, is sent to the air-foam maker through the fire pump, forming the foam.
2. Supply from the external foam source: the foam liquid is sucked from the foam liquid bucket through the inlet of the air-foam spear, making foam for fighting fire.

(1) Foam liquid from the foam tank:

- a. Take the water hose and air-foam spear as needed.
Connect one end of the water hose with the fire pump outlet valve, and the other end is connected with the air-foam spear (other spraying equipment)
- b. Make the handle of air-foam spear at the position for mixing liquid and water.
- c. Start the fire pump for water supply as the instruction.
- d. Turn on the switch of outlet valve.
- e. Open the throttle, adjusting the pump pressure till the standard working pressure of the praying equipment.
- f. Turn down the operation handle of foam liquid on the fire pump, open the foam liquid inlet valve on suction pipe, the air-foam liquid will spray out from the fire monitor (foam spear) or other spraying equipment.
- g. If the foam liquid in foam tank has run out, the foam inlet valve could be turned off. After wrenching the screw of the external liquid inlet, fit the pipette, and get the other end into the foam liquid bucket, the foam could continue praying.
- h. While the fire pump is send the mixing liquid, if the water in tank is not enough, don't add any water with pressure at the inlet of fire pump.
- i. After fighting fire, the proportioner and the pipe system must be cleaned with water. The

proper way is to put the pipette into clean water, start the pump, and turn on the proportioner valve.

(2) Foam liquid suction:

- a. Take the water hose and air-foam spear as needed.

Connect one end of the water hose with the fire pump outlet valve, and the other end is connected with the air-foam spear (other spraying equipment)

Make the handle of air-foam spear at the position for mixing liquid and water.

- b. As the instruction for fire pump in water supply, adjust the pump pressure, reaching the indicated outlet pressure of the air-foam spear, then the foam could be sprayed out.
- c. The air-foam spear must be cleaned after firefighting.

NOTES:

In both condition, the foam outlet valve should be turned off, preventing the water backflow to the foam tank (bucket).

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Water inlet operation steps

1. Carefully check around the working environment, make sure working is safety.
2. Turn on the chassis battery switch, then whole truck electric system working.



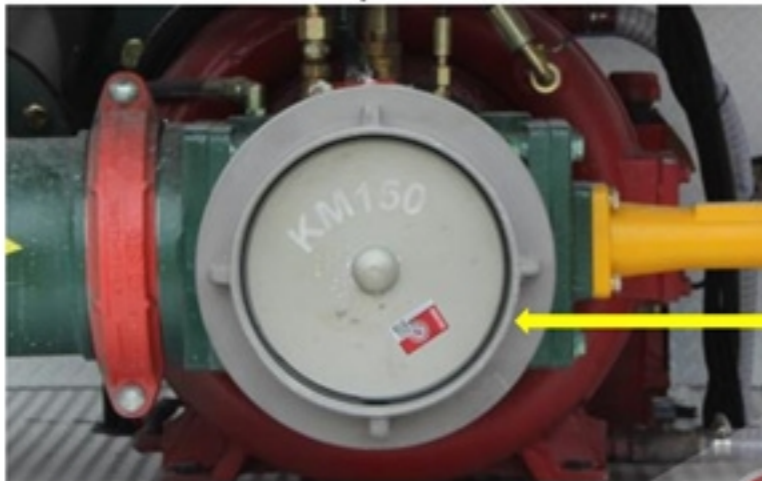
Turn on the chassis battery

3. Use the Control Panel in pump house, press the Power Switch button



Press to turn on the main Power Switch

4. Connect the Pipeline with Suction Joint, make sure the connection is fasten.



5. **Only** turn on the Water Inlet Control Valve, then water can be pump into the tank from river, pool, etc, through the fire pump

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Water Inlet Control Valve:
 PULL OUT: Valve open
 PUSH IN: Valve closed

- Turn on the Ball Valve of Vacuum Pump, to make the pump working (Please keep it Open)



Turn on the Vacuum Pump Ball Valve

- Turn off the Main Water Outlet Valve (Outlet Valve of Tank)



Turn off the Outlet Valve of Tank

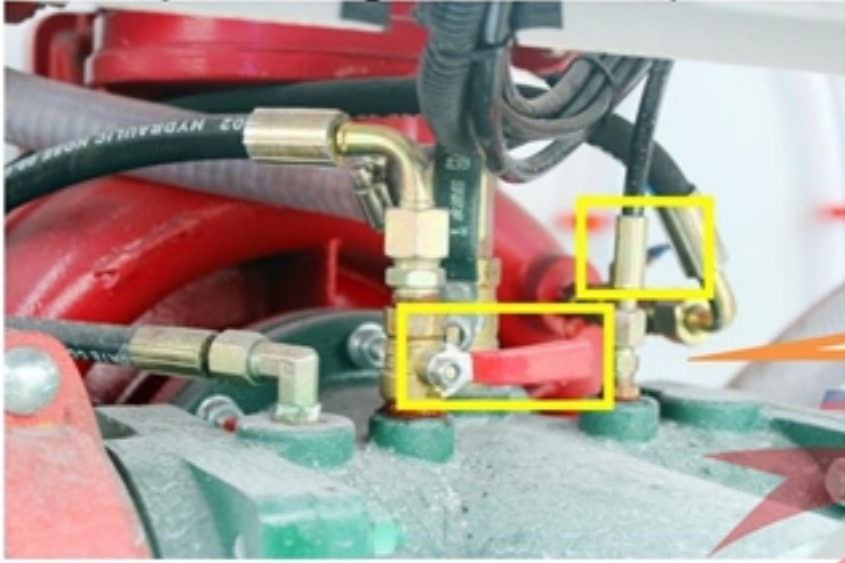
- Turn off the Pump Drain Ball Valve. (This valve main used to discharge remained water from the pump)



Pump Drain Ball

- Pump & PTO Recirculating Water Valve (Mainly used to cooling and Pump and PTO)

after keep working over 30min)



Pump & PTO
Recirculating
Water Valve

10. Turn off two sides Water Outlet Joint (Totally 4 units)



Pump & PTO
Recirculating
Water Valve

11. Turn off whole Foam System, below four valves keep closed.



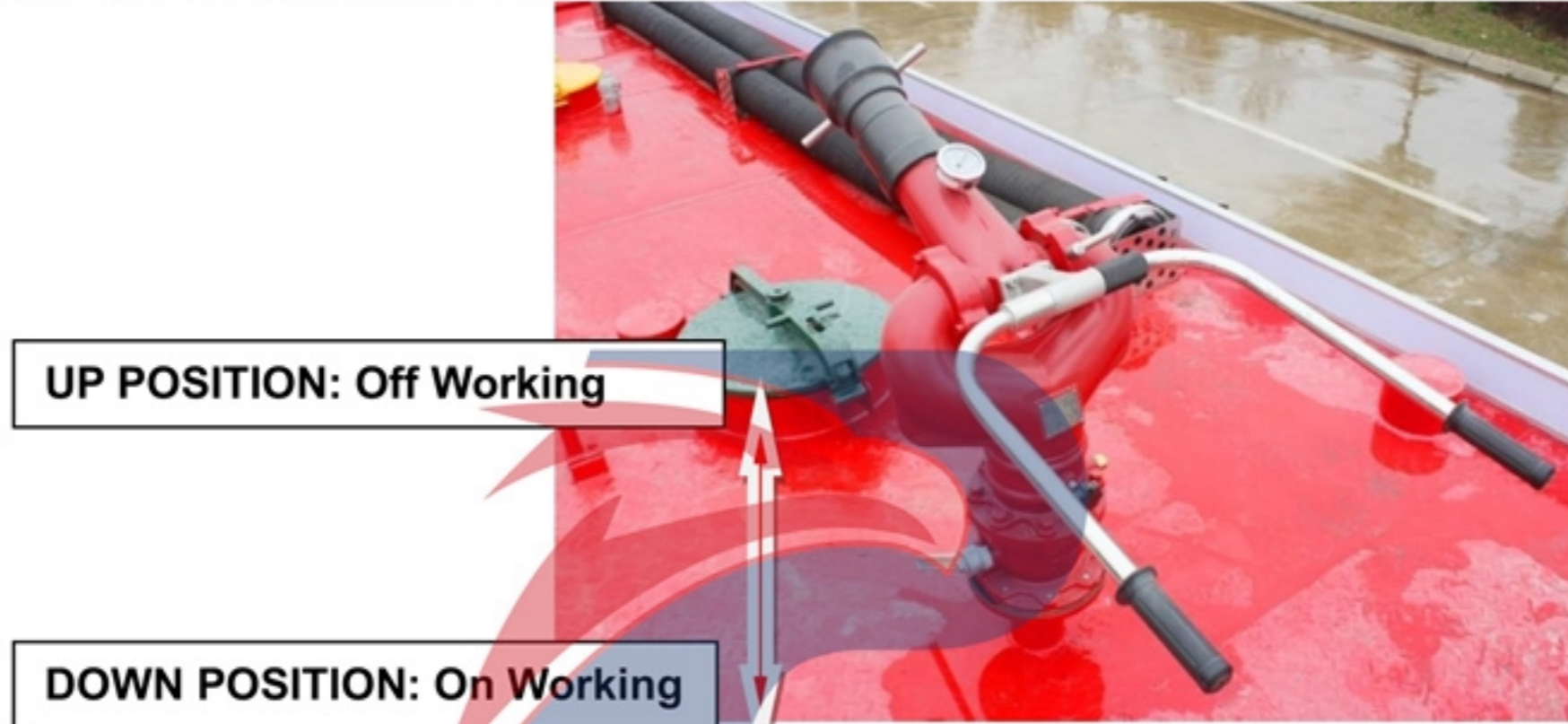
Outside Foam
Inlet Valve

Foam Outlet Valve
(Control foam in
tank and fire pump)

Foam
Proportional Valve

Foam Intake Valve

12. Turn off the Fire Monitor control valve



13. Turn off Foam Tank Drain Outlet 1 and Water Tank Drain Outlet 2.



14. Start the truck engine, make sure the truck air pressure is over 0.6Mpa, then press the Clutch pedal, pull out the PTO control rod to make PTO working, then release the Clutch pedal slowly. Then PTO and Fire Pump start working.



Sandwich PTO control rod
PULL OUT: PTO working
PUSH IN: PTO not working

15. Use the Control Panel in pump house, press the Vacuum Pump button, the fire pump start working to suction water inside the tank.



Press to turn on the main Vacuum Pump

16. Adjust the Accelerator Handle to keep the Rotation Meter at 2000~3000r/min, and the Vacuum Gauge at 0.02~0.04Mpa



Vacuum Gauge at 0.02~0.04Mpa

Rotation Meter at 2000~3000r/min



Throttle Cable of

17. When water get through Ball Valve of Vacuum Pump, means the fire pump successfully pumps water, then can press to turn off the Vacuum Pump button. The fire pump starts suction water to the tank automatically



When this pipeline have water



Press to turn off the main Vacuum Pump

18. When Water Level Gauge reaches the maximum value and the tank is full of water. Press the Clutch pedal, push in the PTO control rod to make PTO not working.

Water Level Gauge reaches the maximum value



19. Water Pump In steps finished, stop the truck engine, and turn off the Water Inlet Control Valve, turn on the Water Drain Ball Valve to discharge all water in fire pump if need.



Water Inlet Control Valve:
PULL OUT: Valve open
PUSH IN: Valve closed

Pump Drain Ball

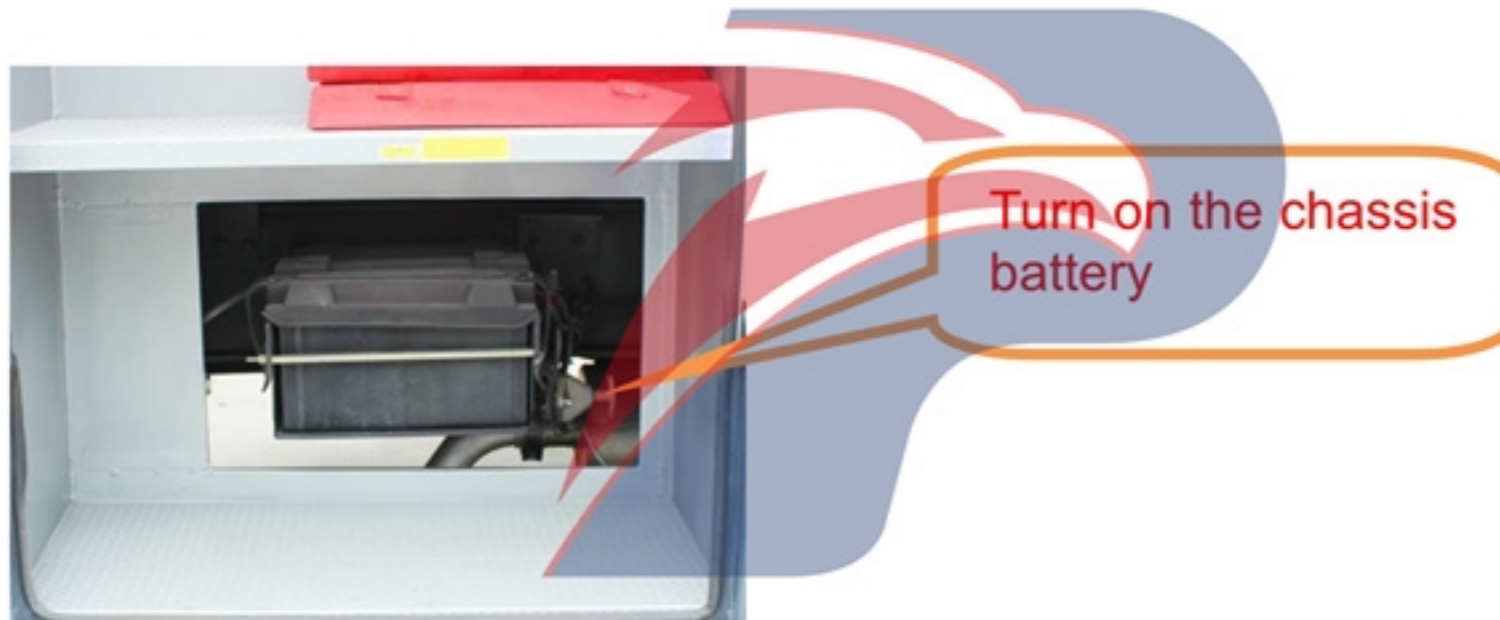
20. If get water from Fire Hydrant, just need to connect the Fire Hydrant with fire pipelines, then water can get into the tank under pressure of Fire Hydrant.



Connect with Fire

Water and Foam outlet operation steps

- 21. Carefully check around the working environment, make sure working is safety.
- 22. Turn on the chassis battery switch, then whole truck electric system working.



- 23. Use the Control Panel in pump house, press the Power Switch button



- 24. Carefully check and confirm Water Level Gauge and Foam Level Gauge reaches the maximum value.



- 25. Make sure the Suction Pipe Cover is tightly connected.



Make sure the cover is tightly

26. Turn off the Water Inlet Control Valve.



Water Inlet Control Valve:
PULL OUT: Valve open
PUSH IN: Valve closed

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27. Turn on the Ball Valve of Vacuum Pump, to make the pump working (Please keep it Open)



Turn on the Vacuum Pump Ball Valve

28. Turn on the Main Water Outlet Valve (Outlet Valve of Tank)



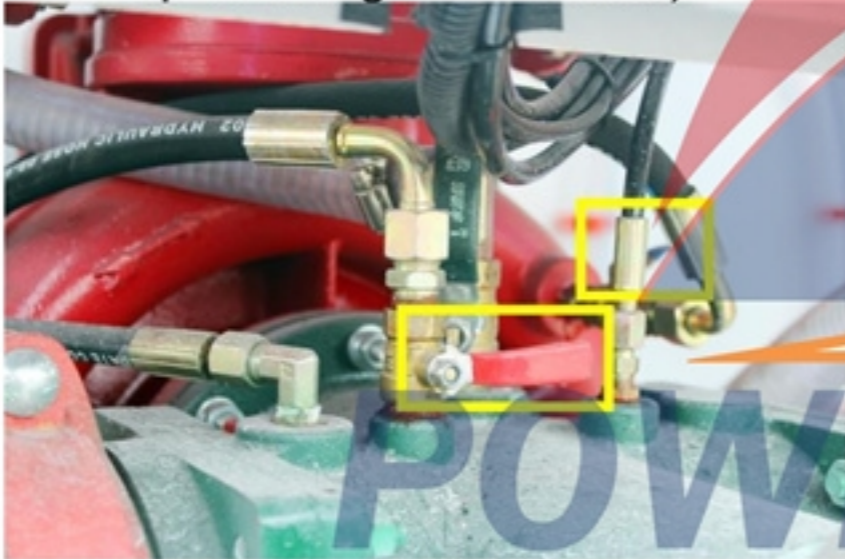
Turn on the Outlet Valve of Tank

29. Turn off the Pump Drain Ball Valve. (This valve main used to discharge remained water from the pump)



Pump Drain Ball

30. Pump & PTO Recirculating Water Valve (Mainly used to cooling and Pump and PTO after keep working over 30min)



Pump & PTO Recirculating Water Valve

31. Turn on whole Foam System, below four valves keep open.
 If below four valves keep closed, the fire pump just have water pump out



Outside Foam Inlet Valve

Foam Outlet Valve (Control foam in tank and fire pump)

Foam Intake Valve

Foam Proportional Valve Adjust water and foam ratio

32. Turn on two sides Water Outlet Joint (Totally 4 units, can be open/close separated)
 Connect with Fire Pipeline for firefighting work



Pump & PTO
Recirculating
Water Valve

33. Turn on the Fire Monitor control valve

UP POSITION: Off Working

DOWN POSITION: On Working



Use Fire Pipeline (11) or Fire Monitor (12) is depends on situation!

34. Turn off Foam Tank Drain Outlet 1 and Water Tank Drain Outlet 2.



Foam Tanker
Drain outlet 1

Water Tanker
Drain outlet 2

35. Start the truck engine, make sure the truck air pressure is over 0.6Mpa, then press the Clutch pedal, pull out the PTO control rod to make PTO working, then release the Clutch pedal slowly. Then PTO and Fire Pump start working.



Sandwich PTO control rod
PULL OUT: PTO working
PUSH IN: PTO not working

36. Adjust the Accelerator Handle to keep the Rotation Meter at 2000~3000r/min, and the Pressure Gauge at around 1Mpa. Then mixed water and foam can Jetting out from Fire Pipeline (11) or Fire Monitor (12)



Pressure Gauge at around 1Mpa

Rotation Meter at 2000~3000r/min

Throttle Cable of

Water Level Gauge reaches the minimum value



Foam Level Gauge reaches the minimum value

38. Turn off the Main Water Outlet Valve (Outlet Valve of Tank)



Turn off the Outlet Valve of Tank

39. Turn on the Pump Drain Ball Valve.



Pump Drain Ball

40. Turn on Foam Tank Drain Outlet 1 and Water Tank Drain Outlet 2.



41. Turn on/off the Fire Monitor control valve 2~3 times, which can make sure not stock inside of it. Then reset the Fire Monitor position to make it suitable for driving.



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