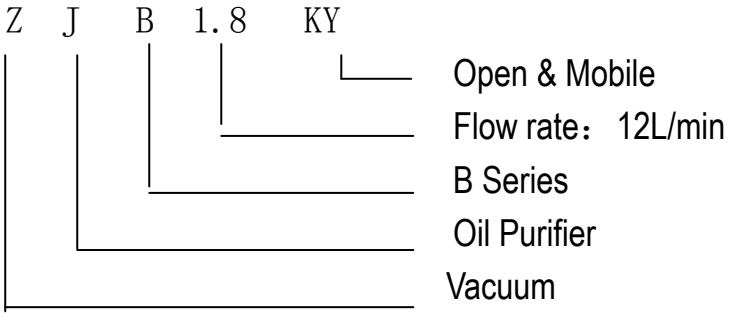
Contents

I. Product Instruction

1. Meaning for Product Item



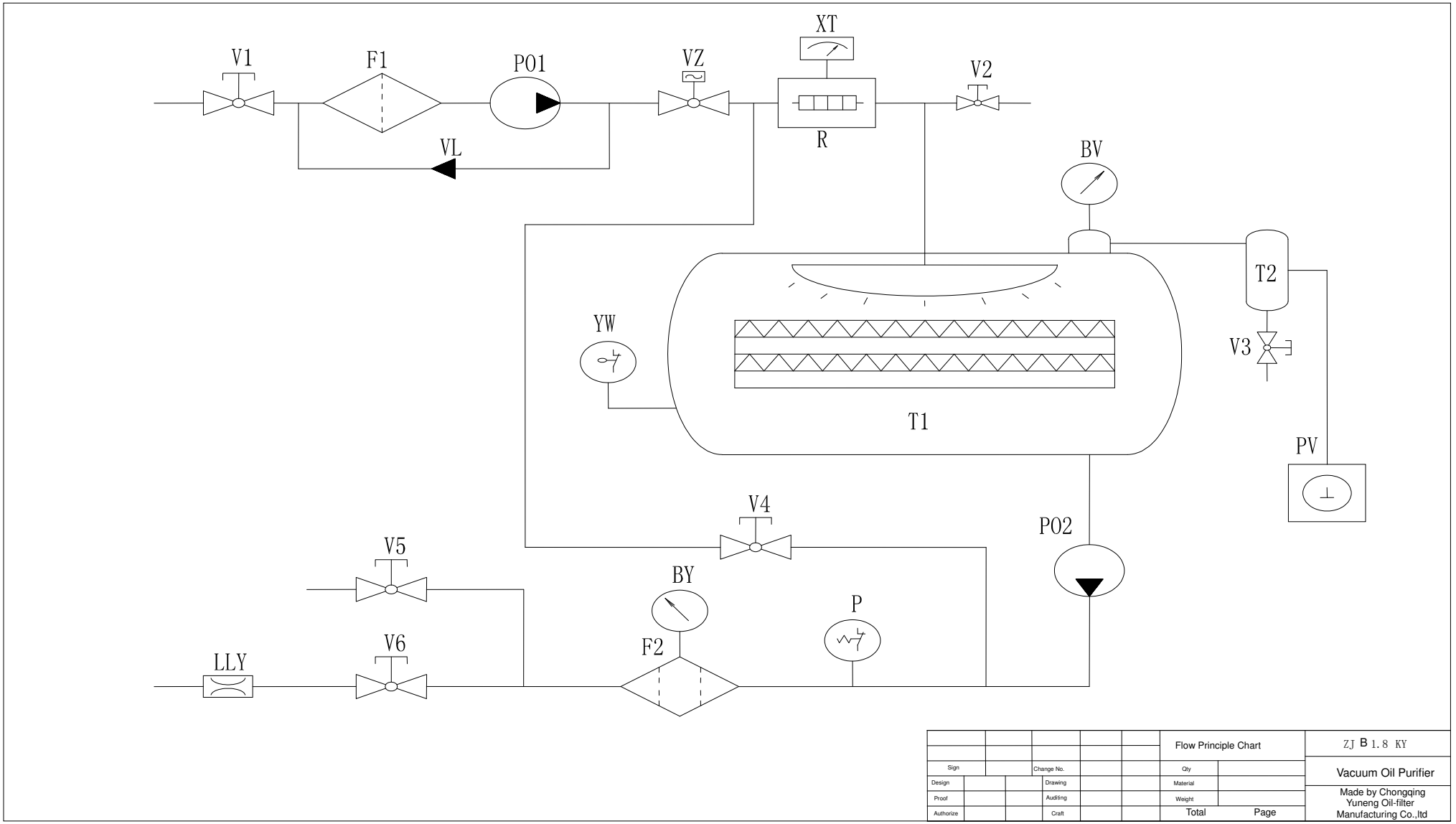
2. Product Technical Parameter

Item	Type Unit	ZJB1.8KY
Flow rate	L/h	≥700
Working Pressure	MPa	≤0.6
Limited Vacuum Degree	MPa	－0.098
Working Vacuum Degree	MPa	－0.095
Working Oil Tep.	℃	45-65
Heat Power	KW	12
Total Power	KW	14
Working Noise	dB(A)	≤85
Dimension: L*W*H	mm	2000X1480X1800
Weight	Kg	320
Diameter for Oil-in& out Pipe	mm	25/25
Absorption Height	m	≤4
Lift	m	≥10

3. Index for Clean Oil

Item	Type / Unit	ZJB1.8KY
Water Content	ppm	≤5
Gas Content	%	≤2
Breakdown Voltage	kV	≥60
Filtration Precision	um	≤5
Machinery Impurities	Eye Test	Without

II. Product Working Process



					Flow Principle Chart		ZJ B 1.8 KY
Sign		Change No.			Qty		Vacuum Oil Purifier
Design		Drawing			Material		
Proof		Auditing			Weight		Made by Chongqing Yuneng Oil-filter Manufacturing Co.,ltd
Authorize		Craft			Total	Page	

1. Clean Oil Flow:

Oil Tank→Oil-in Valve V1→Primary Filter F1→Oil-in Pump PO1→Magnetic Valve VZ→Heater R→Vacuum Separator T1（two ways）：

→Vapor→Drainer T2→Vacuum Pump PV→Air；

→Oil→Oil Pump PO2→Fine Filter F2→Oil-out Valve V5→Back to Oil Tank.

2. Symbol Narration:

Sign	Name	Sign	Name
V1	Oil-in Valve	V2	Degas Valve
V3	Discharge Valve	V4	Return Valve
V5	Sample Valve	V6	Oil-out Valve
VZ	Magnetic Valve	VL	One-way Valve
XT	Temperature Controller	R	Heater
PV	Vacuum Pump	PO1	Oil-in Pump
PO2	Oil-out Pump	P	Pressure Switch
YW	Liquid Switch	LLY	Flow meter
F1	Primary Filter	F2	Fine Filter

3. The Accordance Standard for Product Design, Manufacture & Inspection

3.1. JB/T5285-2001 *Vacuum Oil Purifier.*

3.2. Other standard involve in Item I.

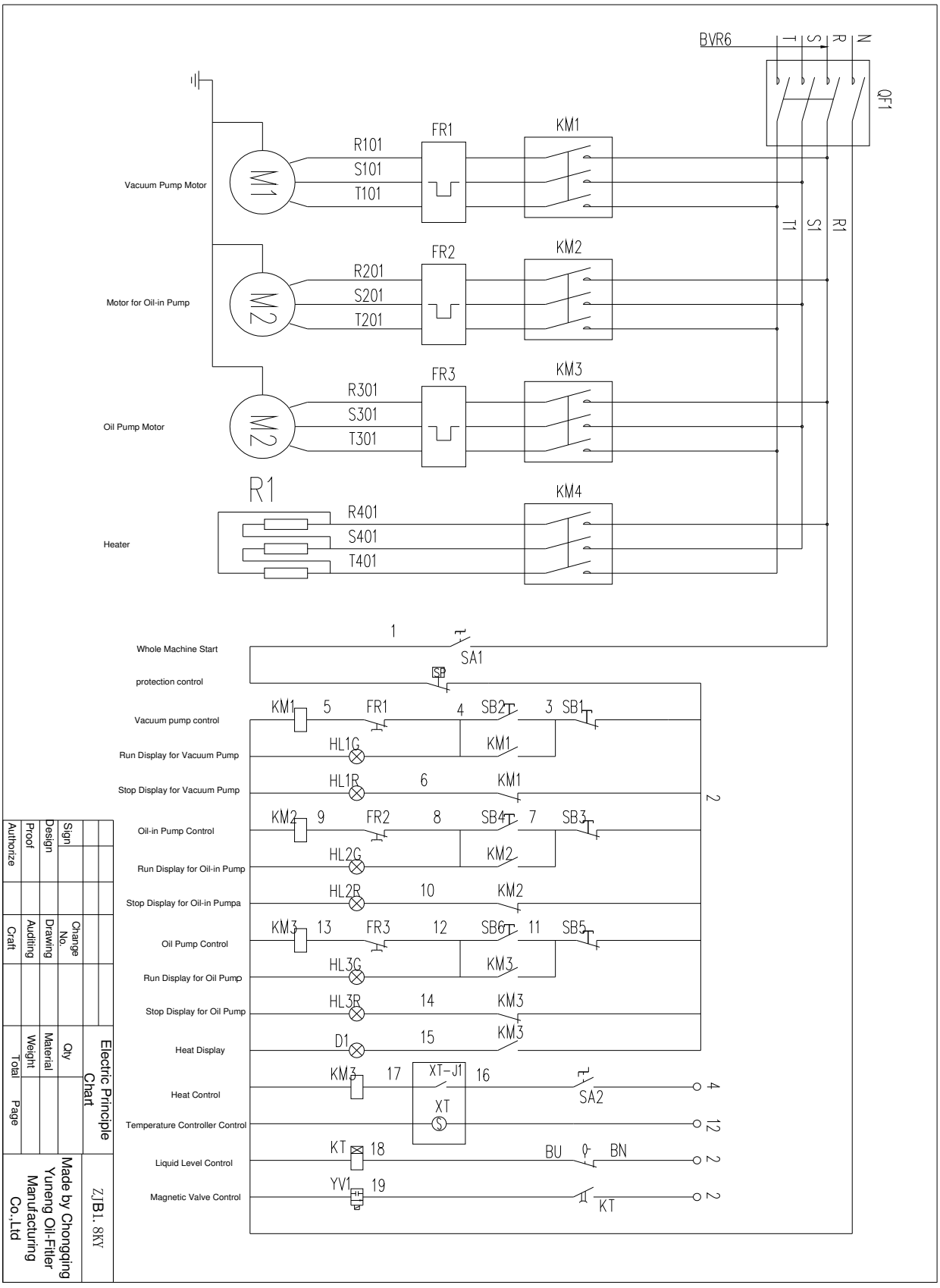
III. Control System

The control system of ZJB1.8KY Vacuum Oil Purifier include: Electric Control System, Constant Temperature Heat Control System, Automatic Liquid Level Control System, Over Pressure Protection System.

1. Electric Control System:

Electric Control System is composed by AC Contactor, Time Relay, Temperature Controller, Pressure Switch, Control Button and Knob etc.

1.1. Principe Chart



1.2 Symbol Name:

Symbol	Name	Symbol	Name
M	Motor	KM	AC Contactor
QF	Air Switch	KT	Time Relay
SB	Control Button	XT	Temperature Controller
SP	Pressure Switch	R	Heater
SA	Knob	YV	Magnetic Valve
HL	Display Lights with the Control Buttons	D	Separate Display Light

2. Constant Temperature Heat Control System: Refer to Electric Principle Chart

Constant Temperature Heat Control System consists in Hear R, AC contactor KM, Temperature Controller XT, Knob SA. When button the Knob SA, the Temperature Controller begin to work with the electricity. If the temperature is lower than the designed, the contact points of Temperature Controller will close and the AC Contactor KM begin to work at the same time so that to make the Heater R begin to work also; The temperature is rising after R working, when the heated temperature is higher than the upper limited, the contact points of Temperature Controller will disconnection and KM will stop working and lead to R stop working also; Until the temperature is less than the upper limited value, the work will begin so that to realize the function of constant temperature.

3. Automatic Liquid Level Control System: Refer to Electric Principle Chart

Automatic Liquid Control System consists in Electric Switch, Time Relay KT, Magnetic Valve YV. When the liquid level in vacuum separate tank lower than the Electric Switch, the Switch will open and Time Relay KT has the electricity to open the Magnetic Valve so that Open the way to the vacuum separation chamber; After the liquid level upper than Electric Switch, the switch will close and Time Relay will stop working and close the Magnetic Valve so that to cut off the way to the vacuum separation chamber. It is realized automatic liquid level control through the circulating.

4. Over-pressure Protection System: Refer to Electric Principle Chart

Over-pressure protection system consists in Pressure Switch SP; When the oil-out pressure is higher than the designed value of pressure switch, the switch SP will close and shut off control line to make the whole electric control line lost power and make the machine stop. So that to realize the function of over-pressure protection.

5. The Usage of Temperature Controller：

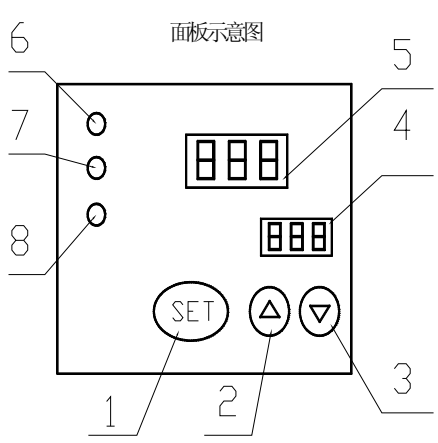
（Please refer to related configuration when operating）

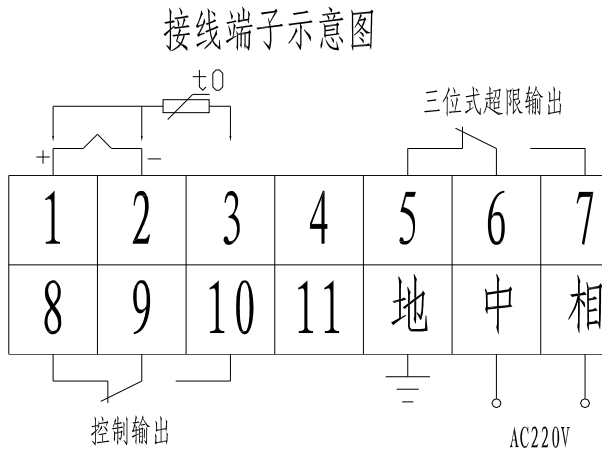
We use temperature controller of XT7000 serial, the instruction as follows:

5.1 Panel Function Table

Serial number	Name	Function
1	Enactment key	Press it for 3 seconds to enter the setting state
2	Enacted number decreace key	Number decrease
3	Enacted number increace key	Number increace
4	Display window	Display the enacted value
5	Display window	Display the enacted item and scaled value
6	Out-put display lamp	Control the out-put display
7	Beyond-limit 1 indicator light	Beyond-limit out-put display
8	Beyond-limit 2 indicator light	Beyond-limit out-put display

5.2 Panel Sketch Map and Connectors Table





5.3 Related Parameters Setting Table

Character	Setting item	Settable range	Leave factory setting
Su	Three place set value	0-99.9	55
CC	Difference value	0.2to19.9	5
Cc	Three place set value	0.2to19.9	2
SC	Measured difference correction	-19.9to19.9	0.0
LC	Set parameter lock	OFF: locked，ON:unlocked	OFF
Controlled temperature setting		0-99.9	57.5

Note： a. The controlled out-put temperature is (controlled temperature-0.5* difference value) ℃～ (controlled temperature+0.5* difference value) ℃. It is affiliated with connectors 8,9and 10.As what is in the above table：55℃～60℃.

b. The beyond-limit output temperature should be (beyond-limit temperature-0.5* beyond-limit difference value) ℃～ (beyond-limit temperature+0.5* beyond-limit difference value) ℃. It is affiliated with connectors 6,7 and 8. As what is in the above table：54℃～56℃.

c. In order to prevent mistaken manipulation, please unlock before resetting the temperature, and lock it again after setting.

d. If the measured value surpasses the theoretical value N℃， SC can be adjusted to - N℃.

IV. Manipulation Method

Notice: ⚠

The bolts of connectors can be loosed easily. Therefore, all connectors should be tightened after 100 hours of using or a transit. Otherwise the loose connectors will affect the running and even damage the motor or heater etc. Please conform to our suggestion.

1. Preparative Work Flow：

Serial no.	Manipulation steps	Manipulation method
1	Install	The equipment should installed on a even surface
2	Rivet the line	Use copper opening terminal 150A to rivet the line and tin the connection to prevent oxidation.
3	Connect the line	Connect three-phrase & four-line power line
4	Tighten the connectors	Tighten all the connectors（especially the heating connectors）
5	Test the power supply phrase sequence	Turn the feeding oil pump in the same way of the sign. Exchange two random line-in phrases if the direction is wrong.
6	Examine vacuum and oil pump	Run the oil pump and vacuum pump to examine whether there is block
7	Connect in/out oil tube	Connect in/out oil tube with the tank (transformer) to be disposed properly.

2. Oil Filtering Work Flow:
（Note： make sure the gas ballast valve of vacuum pump is opened）

Serial No.	Manipulation steps	Manipulation method
1	Exchange the valves	Close the oil-in & out valves， and open the fuel return valve according to the working mode
2	Connect the power supply	Connect the air switch of the line-in
3	Start the whole equipment	Knob on the whole equipment knob（left or right）
4	Start the vacuum pump	Press the green controlling button of the vacuum pump
5	Open the oil-in & out valve	If vacuum degree over than -0.06MPa, contrarotate the handle of the oil-in valve（the handle is parallel to the axis）
6	Start the oil pump	Press the green button for the oil pump control when the liquid level of the observation mirror is near the middle line
7	Adjust the oil-in valve	Turn down the oil-in valve for about 1/4, observe the oil-in/out and make oil-in a little bigger than oil-out (mainly in order to enhance the dehydrating efficiency)
8	Start the heater	Connect the heating knob when the liquid level is calm

		（left or right）
9	Adjust the heating temperature	Adjust the controlling temperature and difference temperature according to the *instructions for temperature controller*
10	Collect the oil sample	Collect the oil sample when the oil temperature reaches 60℃ and the oil has been processed for about 5 times
11	Turn to the next flow	Turn to the next work flow when the oil treatment is eligible

3. Turning Off Work Flow：

Serial No.	Manipulation steps	Manipulation method
1	Turn off the heater	Turn off the heating control knob(in the vertical direction)
2	wait	Filter the oil for 5-10 min.
3	Turn off the vacuum pump and roots pump	Press the STOP button of the vacuum pump and roots pump
4	Turn off the feeding oil pump	Press the STOP button of the feeding oil pump when oil in the vacuum separation chamber is transferred over
5	Turn off the whole machine's knob	Turn off the whole machine's knob(in the vertical direction)
6	Turn off the main power supply	Turn off the main power supply's air switch
7	Turn off the oil-in & out valves	Turn off the oil-in/out valves, oil feedback valve and auxiliary valve
8	Dismantle the oil-in& out pipes	Dismantle the oil-out pipe and gas extraction pipe

4. Emergency Turning Off Work Flow：

Serial No.	Manipulation steps	Manipulation method
1	Turn off the whole equipment	Turn off the whole equipment's knob(in the vertical direction)
2	Turn off the main power supply	Disconnect the main power supply' air switch

5. Maintenance Work Flow：

Maintenance time：The oil-filter should be maintained when it will stop working for over a week.

Serial No.	Manipulation steps	Manipulation method
1	Remove the oil sump	Remove the oil sump
2	Release the oil in pumps	Release all the oil in the vacuum pump and roots pump
3	Release all the left oil	Light up the vacuum pump for about 3 times to release all the left oil in the pump
4	Install oil drain plug	Install the oil drain plug， take care not to damage the plastic cushion
5	Remove oil in-let sump	Remove oil in-let sump
6	Fill in vacuum pump oil	Fill in vacuum pump oil of 0# or 1# into the vacuum pump，with the liquid level between the two lines
7	Install oil in-let sump	Install the oil in-let sump，take care not to damage the plastic cushion
8	Turn off the oil-in& out valves	Turn off the oil-in& out valves of the oil-filter
9	Start the whole machine	Turn on the whole machine's knob (left or right)
10	Start the vacuum pump	Press the start button of the vacuum pump
11	Turn on the vacuum pump's gas ballast valve	Turn on the vacuum pump's gas ballast valve
12	Vacuum dry	Maintain the limit vacuum degree and run the vacuum pump for more than 2 hours
13	Stop the vacuum pump	Press the STOP button of the vacuum pump
14	Stop the whole machine	Stop the whole machine's knob(in the vertical direction）
15	Turn off the main power supply	Disconnect the time line's air switch
16	Dismantle the power line	Dismantle the power line
17	Cleansing	Rub away the equipment's oil and dust
18	lay	Put the equipment at dry and draught place
19	Cover the protection cover	Cover the equipment with tent cloth or plastic film
20	Store	

V. False Maintenance

1. The Cleaning of Rough Filter

Serial number	Manipulation	Serial number	Manipulation
1	Power off	2	Eject the dirty oil
3	Remove the cover board flange	4	Take out the dirty filter core
5	Replace filter core	6	Install the cover board flange

2. The Cleaning of Fine Filter

Serial number	Manipulation	Serial number	Manipulation
1	Power off	2	Eject the dirty oil
3	Remove the cover board flange	4	Take out the dirty filter core
5	Replace filter core	6	Install the cover board flange

3. Failure Maintenance

Phenomena	Cause	Elimination method
High pressure	1. The fine filter has been blocked	Replace the fine filter
	2. Oil-out Valve is not open	Open the oil-out valve
Little oil-out or no oil come out	1. Leakage of gland seal of Oil Pump	Check the gland seal
	2. Leakage of the oil-in& out of oil pump	Check the gasket ring of oil-in & out
	3. Wear and tear of oil pump's rotor	Replace the oil pump

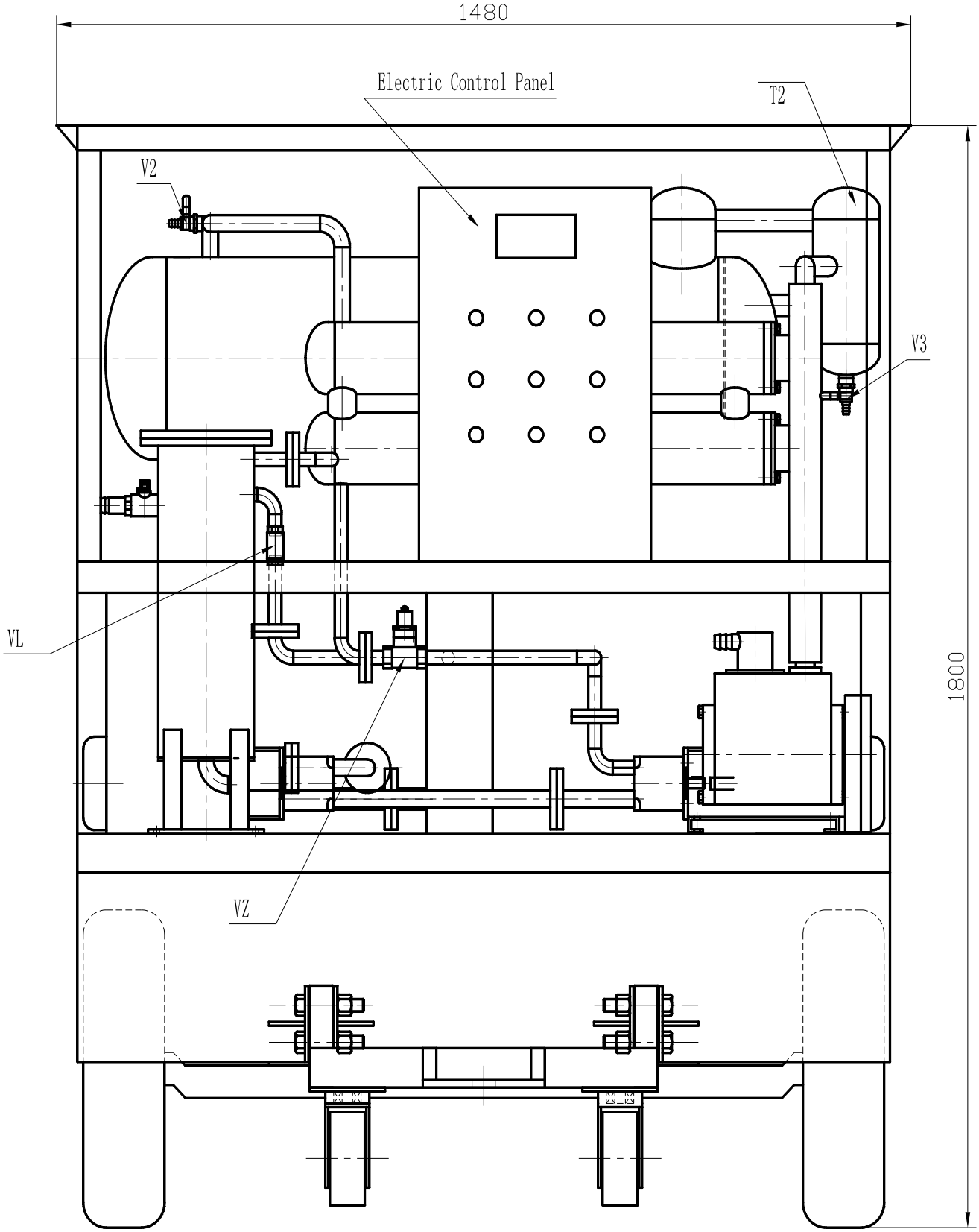
Vacuum Pump does not work	1. The troubleshooting of vacuum pumps	Repair the vacuum pump
	2. The vacuum pump does not start	Restart the vacuum pump
Oil Pump does not working	1. The troubleshooting of oil pump	Repair the oil pump
	2. The oil pump does not start	Restart the oil pump
Insufficient Oil-in	1. The oil-in valve do not open	Open the oil-in Valve
	2. The primary filter was blocked	Clean the Primary Filter
	3. The troubleshooting of Electric Switch	Check the line or replace the Electric Switch
	4. The Troubleshooting of Magnetic Switch	Check the Magnetic Switch
The machine stopped by accident	1. The power supply is unstable	Run the machine after checking well
	2. The pressure is too high	Restart the machine after decrease the pressure

4. Simple Failure Phenomena

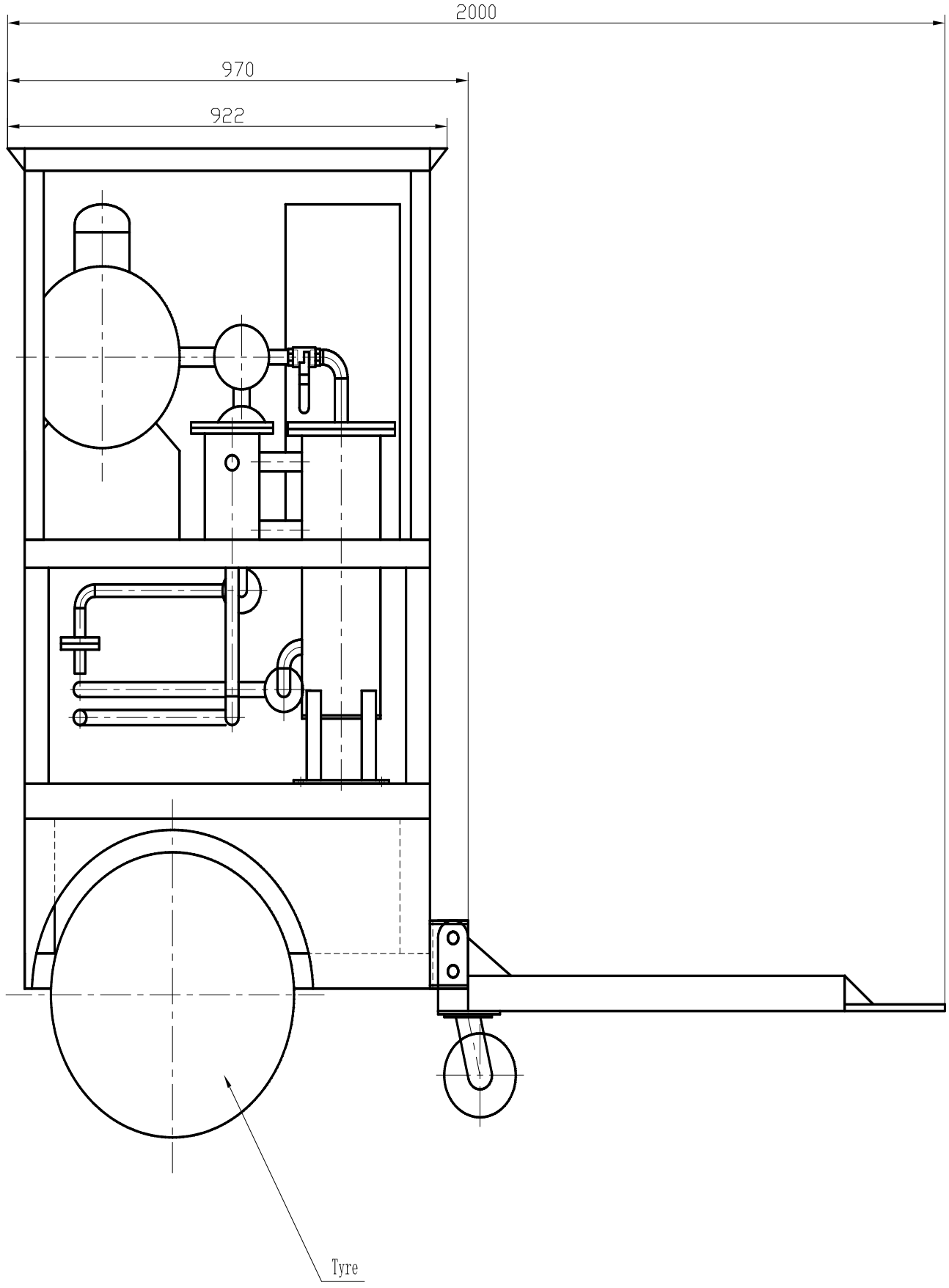
No.	Cause	Phenomena
1	Primary Filter block	Insufficiency oil-in
2	Fine Filter block	The display value of pressure meter is over than 0.6 Mpa
3	The machine stop accident	The unit stop working accident
4	Insufficiency oil-in	There is no liquid in vacuum separation chamber when the machine running
5	Vacuum pump does not work	Vacuum pump stopped by accident when the machine running
6	Oil Pump does not work	Oil pump stopped by accident when the machine running
7	Little Oil-out or no oil out	No display in flow meter

VI. Process Signal with the Assembly Drawing

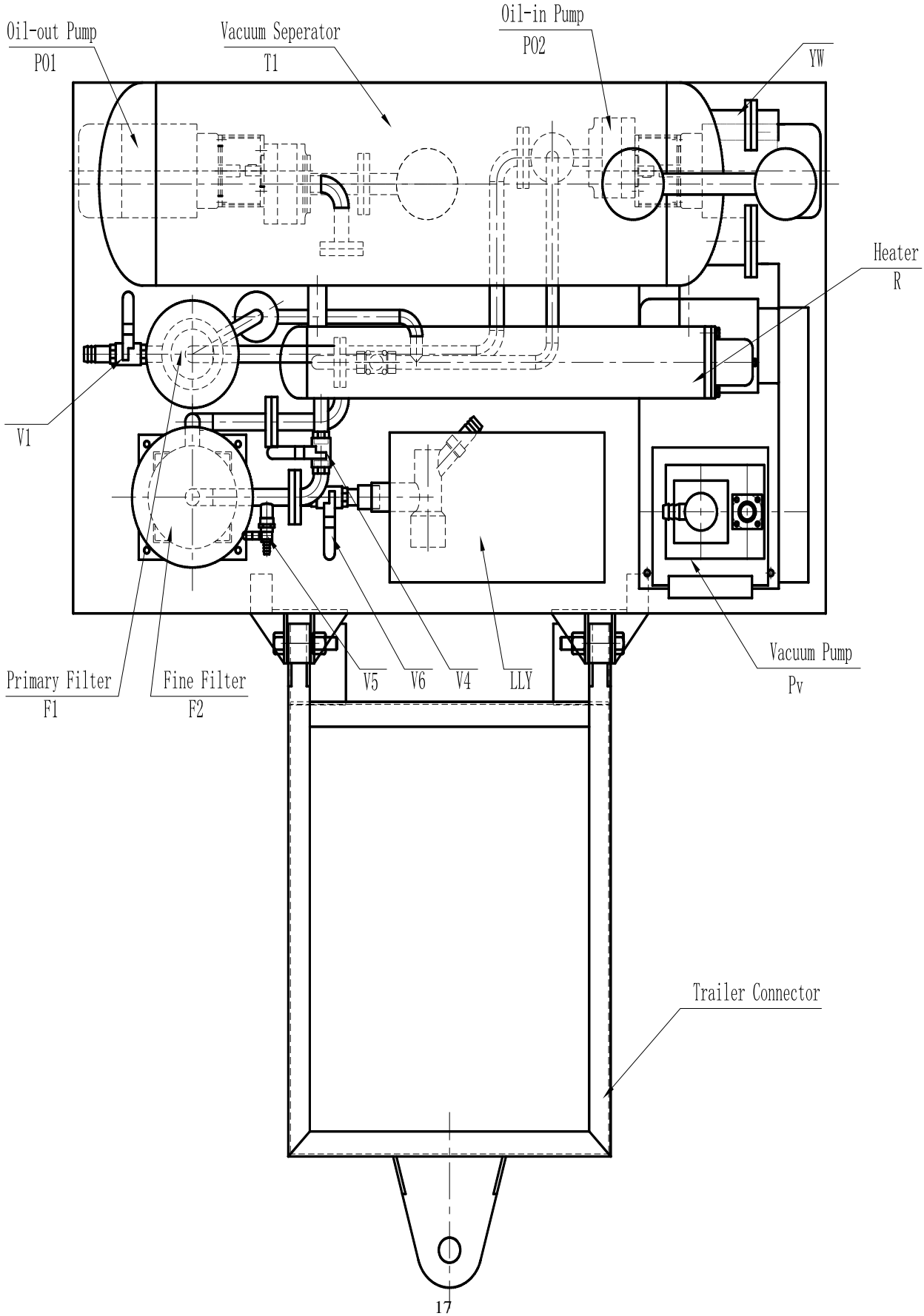
1、Front：



2. Left：



3. Planform


Oil-out Pump
P01
Vacuum Seperator
T1
Oil-in Pump
P02
YW
Heater
R
V1
Primary Filter
F1
Fine Filter
F2
V5
V6
V4
LLY
Vacuum Pump
Pv
Trailer Connector

4. Trailer Use Safety

When need to haul the oil purifier in outside, please first assemble the two universal wheels with the trailer, then connect the trailer with the oil purifier with 4 pcs of M20 bolts, and finally connect the trailer with the truck (Note: The two universal wheels must be keep 30mm from the floor and should keep the condition in all process). The speed of the trailer must be limited, and the speed should be within 30km/h.