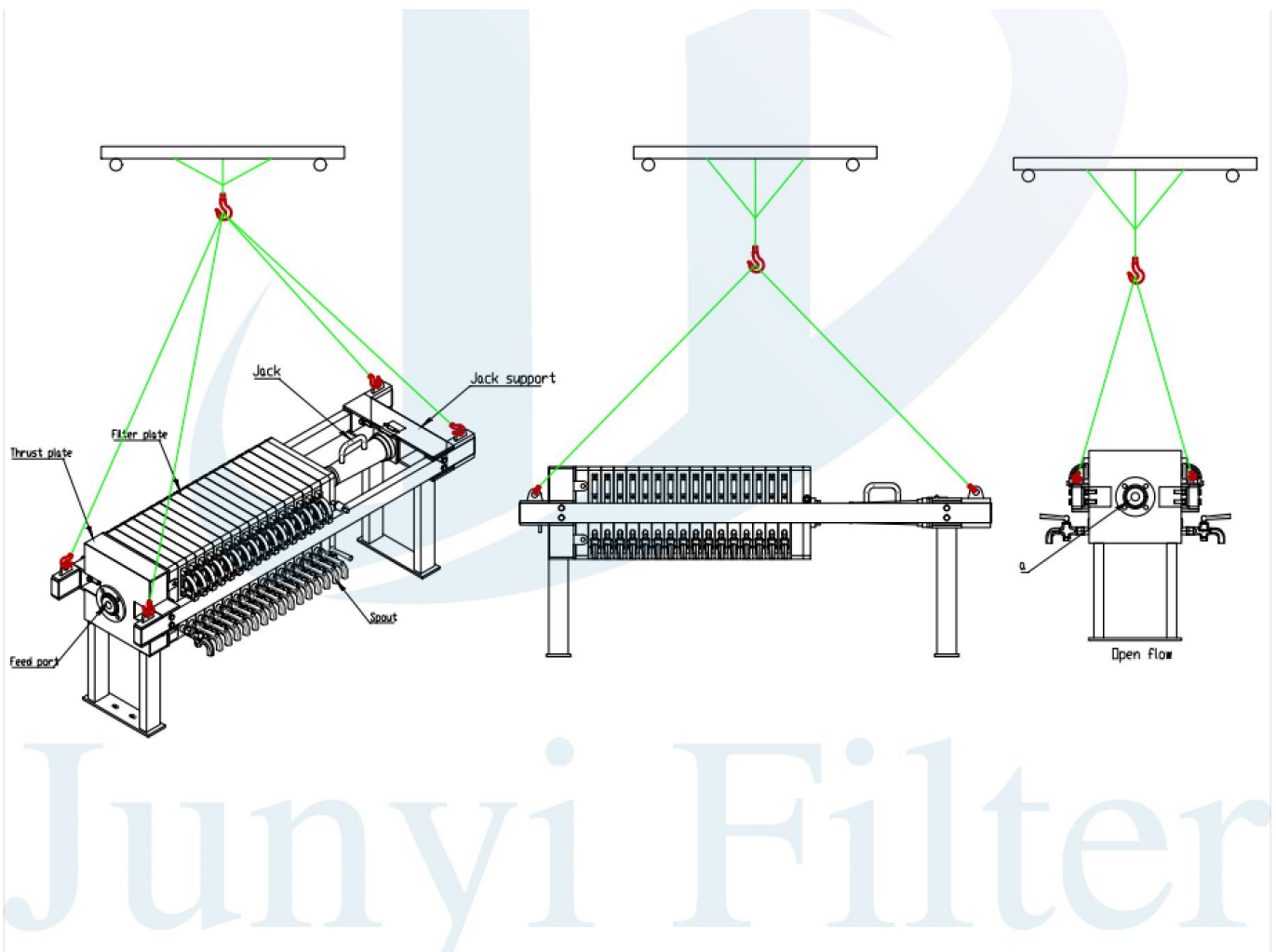


Manual type jack press filter machine filter equipment process principle

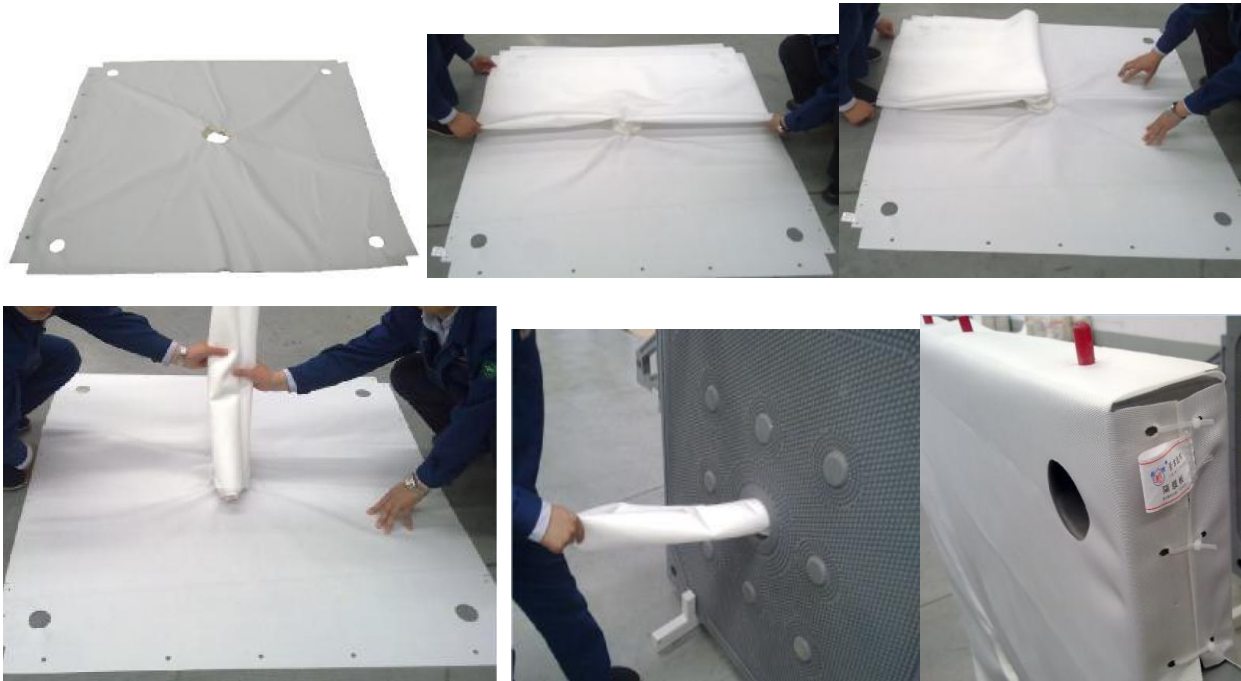
A、 Schematic diagram of lifting filter press



B、 Filter press cloth installation precautions are as follows:

1. The part of the filter cloth that is pressed around the perimeter should be made flat and there should be no folds to avoid the filter plate squeezing the filter cloth and causing damage or mud leakage.
2. When installing, check whether there are foreign objects or sludge particles between the filter cloth and the filter plate, because they may cause damage to the filter plate or the filter cloth when the plate is closed.
3. Do not lock the filter cloth too tightly, otherwise the residual sludge of the filter cloth at the press of the filter plate will not be removed.
4. Spare filter cloths should be kept in a cool, dry place and it is recommended that they be covered and protected by a dark shade cloth to avoid UV rays and to prevent deterioration of the filter cloth.
5. Before installing the filter cloth, the supporting filter cloth should be installed first, the purpose is to prevent the wear of the filter cloth surface caused by the gravity factor when the filter cloth is taken down by the filter plate during the mud discharge. This helps to protect the filter cloth and extend the service life of

the filter cloth.



C.Precautions

- 1, The filter plate must be placed in order and the specified number, and it is forbidden to start operation in the case of less than the specified number of filter plates to prevent accidents.
2. The pressure of the oil cylinder shall not exceed the rated value, otherwise the relevant parts of the filter press will be damaged.
3. The valves for filtrate, lotion and compressed air must be opened according to the operating procedure and must not be opened at the same time.
4. The temperature of the filtration slurry must be controlled at $<80^{\circ}\text{C}$, if $>80^{\circ}\text{C}$, it should be specified before ordering.
5. When moving the filter plate, the force should be uniform and appropriate and should not collide and beat, so as not to damage the sealing surface and handle.
6. After discharging the cake, the filter plate and filter cloth must be rinsed clean, and never allow residue to stick on the sealing surface or orifice, otherwise it will affect the sealing and the smoothness of the orifice and thus cause the deformation of the filter plate.
7. The selection of filter cloth must meet the filtration requirements of filter pulp, otherwise it will be unclear filtration, or the filtration speed is too slow to achieve the filtration purpose and the adverse consequences of low filtration efficiency.
8. Filter cloth will be hardened and its performance will be reduced after a period of time. For this reason, it needs to be inspected regularly. If it is found to have the phenomenon of hardening, then it can be

neutralised, soaked and washed with corresponding low acid and weak alkali, so as to make it restore its proper function.

9. Hydraulic components such as oil tanks, cylinders, oil pumps and relief valves need to be periodically run empty and cleaned in a cycle. Filter presses used for the first time under general working conditions should have their oil changed within one month. The filtration precision of the working oil is 20um, and the replacement cycle of the working oil is 6 months.

10. The body of the machine should be kept clean, and the screw part should be lubricated with grease. The trolley and transmission mechanism should be refuelled in time to maintain good lubrication. Do not climb or hit on the pipeline connecting the inlet and outlet holes to avoid liquid leakage at the plastic welding place.

11. The steel cable must be hung at the four ends of the girder to prevent the main beam from deformation.

D、 Safe operation

① Preparation before commissioning:

(1) Check whether the fasteners are tight, whether the parts are complete, and whether the oil and electric circuits are installed correctly.

(2) Check whether the cylinder is flexible and whether the high and low pressure tubing connection is correct.

(3) The filter cloth is properly installed on the filter plate. ? ? ?

② Safe operation procedures:

1. People who do not understand the machine should not start the machine without authorization.

2. Found that the machine has a serious oil leakage or abnormal phenomenon occurs in the work (unreliable action, loud noise, vibration, etc.) should be stopped immediately to check and analyse the cause. Then remove the fault.

3. During the working process of the machine, it is not allowed to overhaul or adjust the equipment parts, so as to avoid unnecessary damage and accidents.

4. Do not work under excessive pressure.

5. Do not adjust the relief valve at will.

③ Fully automatic filter presses have two types of control: manual control and automatic control. (The automatic pressure preservation type is manual only).

E、 Use of maintenance, maintenance and precautions

1. The operator must be familiar with the contents of the instruction manual, and strictly in accordance with the requirements of the manual operation, adjustment, use and maintenance.
2. Choose high-quality filter cloth and the filter cloth should not be damaged, the sealing surface is not wrinkled and overlap.
3. Often check whether the machine parts and components are installed safely, whether the fasteners are fastened, whether the hydraulic system is leaking oil, and whether the transmission parts are flexible and reliable.
4. Often check whether the quality of hydraulic oil and the height of the oil level meet the requirements, and whether the oil is pure. The hydraulic system should be kept clean, waterproof and dust proof.
5. After each startup, carefully observe the working condition of the machine, if there is an anomaly, it should be stopped immediately for maintenance.
6. The oil temperature in the tank should not be higher than 60°C; The oil tank is strictly prohibited from water and dust; The oil filter on the hydraulic station should be cleaned frequently. The electrical control part should be tested once a month for insulation performance, and the damaged electrical components should be replaced or repaired in time.
7. One month after the first use of the machine, the oil tank, oil circuit, cylinder, etc., should be cleaned, replaced with qualified new oil, and then replaced and cleaned once every six months.
8. The filter pressure, compaction pressure and feed liquid temperature are not allowed to exceed the specified value. In the absence of filter plate, do not turn on.
9. When starting the oil pump in winter, the hydraulic oil should be warmed as needed, and it can be put into use when the oil temperature rises to more than 15 ° C. Application of low freezing point hydraulic oil in high cold area.
10. Do not adjust the device under working conditions. Do not start the device when the pressure gauge is damaged or not installed.
11. When replacing the new oil pipe for the first time, personnel should not be near the high pressure oil pipe.
12. Mechanical pressing the filter press should pay great attention to the pressing situation and not overload operation for a long time, so as not to burn out the motor or damage the parts.
13. Check and clean the entrance and exit channels frequently to ensure smooth flow.
14. When unloading slag, wash the filter cloth and plate frame as needed to ensure that the sealing surface is free of debris.

15. Relative moving parts should be lubricated frequently.

16. When the machine is out of use for a long time, it should be stored in a ventilated and dry room and the hydraulic system should be filled with oil, and other external leakage processing surfaces should be coated with anti-rust oil. Storage should be placed in a relative temperature of less than 80%, the temperature of -15-40°C non-corrosive medium sheltered place.

17. Filter plate, filter frame shall not be in contact with oil, acid or other substances harmful to the plate frame, should be away from heat sources, avoid the sun and rain.

18. When diaphragm pressing, the material must fill the filter chamber before pressing, and the filter plate can be opened for unloading only after exhausting the air after pressing, so as not to cause diaphragm rupture. The compressed air pipeline should be checked frequently during the work, if the air pipe falls off or the air leakage is serious, the air inlet valve should be closed immediately and the air release valve should be opened. After repairing, it can be used again.

F、 Main faults and troubleshooting methods

Fault phenomenon	Fault Principle	Troubleshooting
Severe noise or unstable pressure in the hydraulic system	1、 The oil pump is empty or the oil suction pipe is blocked.	Oil tank refueling, solve suction pipe leakage
	2、 The sealing surface of the filter plate is caught with misc.	Clean sealing surfaces
	3、 Air in the oil circuit	Exhaust air
	4、 Oil pump damaged or worn	Replace or repair
	5、 The relief valve is unstable	Replace or repair
	6、 Pipe vibration	Tightening or reinforcing
Insufficient or no pressure in the hydraulic system	1、 Oil pump damage	Replace or repair
	2. Pressure adjusted incorrectly	recalibration
	3、 Oil viscosity is too low	Replacement of oil
	4、 There is a leak in the oil pump system	Repair after examination
Insufficient cylinder pressure during compression	1、 Damaged or stuck high pressure relief valve	Replace or repair
	2、 Damaged reversing valve	Replace or repair
	3、 Damaged large piston seal	replacement
	4、 Damaged small piston "O" seal	replacement
	5、 Damaged oil pump	Replace or repair
	6、 Pressure adjusted incorrectly	recalibrate
Insufficient cylinder pressure	1、 Damaged or stuck low	Replace or repair

when returning	pressure relief valve	
	2、 Damaged small piston seal	replacement
	3、 Damaged small piston "O" seal	replacement
活塞爬行	Air in the oil circuit	Replace or repair
Serious transmission noise	1、 Bearing damage	replacement
	2、 Gear striking or wearing	Replace or repair
Serious leakage between plates and frames	1. Plate and frame deformation	replacement
	2、 Debris on sealing surface	Clean
	3 、 Filter cloth with folds, overlaps, etc.	Qualified for finishing or replacement
	4 、 Insufficient compression force	Appropriate increase in compression force
The plate and frame are broken or deformed	1、 Filter pressure too high	turn down the pressure
	2、 High material temperature	Appropriately lowered temperatures
	3、 Compression force too high	Adjust the compression force appropriately
	4、 Filtering too fast	Reduced filtration rate
	5、 Clogged feed hole	Cleaning the feed hole
	6、 Stopping in the middle of filtration	Do not stop in the middle of filtration
The replenishment system works frequently	1、 The hydraulic control check valve is not tightly closed	replacement
	2、 Leakage in the cylinder	Replacement of cylinder seals
Hydraulic reversing valve failure	Spool stuck or damaged	Disassemble and clean or replace the directional valve
The trolley can't be pulled back because of the back and forth impact.	1 、 Low oil motor oil circuit pressure	adjust
	2、 The pressure relay pressure is low	adjust
Failure to follow procedures	Failure of a component of the hydraulic system, electrical system	Repair or replace symptomatically after inspection
Diaphragm damage	1、 insufficient air pressure	Reduced press pressure
	2、 Insufficient feed	Pressing after filling the chamber with material
	3 、 A foreign object has punctured the diaphragm.	foreign matter removal
Bending damage to main beam	1、 Poor or uneven foundations	Refurbish or redo