

Manual

Vibrating screen

Installation, operation, maintenance

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Instruction Manual For ZSF Vibrating Screen

I. Conditions of Usage

1. The elevation is not more than 1000 meters
2. Ambient temperature is not more than 40°C
3. Relative humidity does not surpass 90% (20°C below)

II. Structure Principle

The screen box of the vibrating screen makes self-synchronous rotation along the opposite direction depending on two same vibration motors, which makes the whole screening machine supported on damper do linear motion. Materials go through the sieve loosely and move forward after falling into the screen box from inlet and then finish the separating work finally.

The screening machine is composed of sieve box, vibration motor, damping system and chassis. The sieve box consists of chute, roof, sieve frame, sieve plate (mesh), wire gauze.

The screening machine uses high-performance, long life vibration motor as vibration source to adjust the excitation force of vibration motor so that change amplitude of screening machine. The methods of adjustment as follow: there are a fixed eccentric block and an adjustable eccentric block on each of shaft of vibration motor. Adjust the angle between adjustable eccentric block and fixed eccentric block in order to change eccentric force. The angle between adjustable eccentric block and fixed eccentric block should be 0 degree before delivery. The excitation force is rated force F of vibration motor up to this point. The different angle of excitation force is as shown in the table below. To pay special attention, when adjust excitation force, the adjustable eccentric block on both ends of shaft should be along the same direction and the same angle.

The rotary angle of adjusting eccentric is 0 degree, 60 degree, 90 degree, 120 degree. Excitation force is 0.866F, 0.707F, 0.5F.

The damper system is composed of spring and bearing. The installation method of vibration motor of this series vibrating screen can be divided into down vibration and side vibration. The installation method of damper can be divided into seater and hanging. It can be designed and made according to customer's requirement.

III. Main Technical Data

Model	Layer	Power (KW)	Deck Size	Frequency(times/min)
ZSF—612	1—5	0.5—1.5	600×1200	1460/960
ZSF—520	1—5	0.5—1.5	500×2000	1460/960
ZSF—525	1—5	0.5—1.5	500×2500	1460/960
ZSF—1020	1—5	1.5—3.0	1000×2000	1460/960
ZSF—1025	1—5	1.5—3.0	1000×2500	1460/960
ZSF—1030	1—5	1.5—3.0	1000×3000	1460/960
ZSF—1224	1—4	1.5—3.0	1200×2400	1460/960
ZSF—1525	1—3	1.5—3.0	1500×2500	1460/960
ZSF—1530	1—3	1.5—3.0	1500×3000	1460/960

Note: The data in the table for reference only, the concrete data is confirmed by drawing. The parameter of product can be designed as user's request.

IV. Installation and Debugging

Fix the channel steel on the base and keep horizontal error of four pivots no more than 1mm. The spring has been taken static stiffness test, so the same or close stiffness of spring should be fixed on different bearing position of the same vibrating screen.

Fix spring on down bearing and make convex plate enter the inner bore of spring and keep the up and down parts centered bearing plate, drop the sieve plate and put on the spring.

Each part of screen must be connected firmly including all bolts and spare parts. The minimum clearance is 30-50mm between vibration parts and fixation around.

The double-amplitude should be 5-8mm before delivery, the user can change the angle during two eccentric blocks of vibration motor to adjust the excitation force so

that adjust the amplitude of the whole screen.

V. Operation and Maintenance

Should check if the barrier hold back operation and bolt loose, especially fasten the bolt fixed on vibration motor, bearing, sieve deck.

Check the direction of rotating of two vibration motors if different, if same, should change the connection way of one motor power and make the direction opposite.

When screen running, unload start to run first, then stopping to check if normal. Unload running should be normal.

Unload running four hours later, measure the temperature of bearing which can not more than 75°C, fasten the connecting bolts again, repeating 2-3 times.

When feed the machine, material should be even to keep spreading on the deck uniform. If pull to one side, should adjust the Feeding point

Before stopping the machine, stop feeding first. Don't stop the machine until the material on the deck is over. Clean the material and sundries promptly after stopping the machine.

VI. The Operation and Maintenance of Vibration Motor

Vibration motor is three phase 400V 50HZ, asynchronous motor, enclosed self-cooling type, horizontal installation.

When vibration motor working continuously, the ambient temperature is not more than 40°C

Fix the vibrating motor on the vibrating screen, the foundation bolt of vibration motor must be firmly, each bolt below must add elastic washer. At the primary stage of vibration motor working, it will be loose. So should check the bolt if firm everyday then check every week two weeks later.

The vibrating motor may be damp because of transporting or idle for a long period. Should check Winding insulation, if damp, should adopt corresponding measure to deal with.

The vibration motor should be refueled after using three months, then repaired every

half a year or one year. Should maintain and repair for vibration motor according to the instruction manual. When taking minor repair, should clear the dust of inner of machine and check coil of insulation resistance. If not firm, should repair it in time. When taking heavy maintenance, should take apart motor and blow off inside and outside with compressed air, check the wear of bearing to alter the new lubricating grease.

VII. Transport and storage

The machine can not be inverted, piled up during transport and storage. The motor should be moisture proof.

VIII. Notes:

The users should read the instruction manual carefully before operating the machine. If user operate it no according to the manual, the consequences caused shall not responsible by manufacturer. If inquiry the data of linear vibrating screen by mail, please offer following information to us so that we can supply with rapid and satisfied reply.

1. The name, proportion, moisture content of the processing material
2. What results are you expecting on classification?
3. Production capacity(kg/h)
4. Sieve mesh and grade.
5. Working condition (single-class, succession)
6. Special requirements. Special statement: My company will reserve the rights of all technical data and dimension of ZSF Linear Screen.

Vibrating motor

1. Model and description of product

The product is a series of “Universal Vibrating motor”.

2. Application and service scope of product

Application scope

- 1) Vibrating acceleration of product is lower than 20G(G means gravity acceleration).
- 2) Environmental temperature is not higher than 40 °C. Relative humidity does not exceed 90% (temperature: 25°C) ,otherwise power should decrease in use.
- 3) Exciting force value of main machine should not exceed the specified value on the nameplate, otherwise exciting force should decrease in use.
- 4) Area sea lev °C is not more than 1000m, if it is more than 1000m, but not more than 4000m, rated temperature limited value should decrease 0.5°C when increasing 100m every time.

3. Main Structure and working principle

1) Working principle

Universal and vertical vibrating motor are comprised of the special-made motor and shock block. When the universal motor rotates, the shock block will create the exciting force to vibrate mechanism through motor bottom-foot. When vertical motor rotates, the shock block will create revolving inertia force to the working position of vibration mechanism through disc position of motor housing so that working position creates three dimensional movement of horizontal vertical and inclination.

b) On both ends of the shaft equips with two sector eccentric block and are used to adjust the included angle of eccentric block so as to change exciting force.

2)Adjustment of shock force

- 1.Remove safeguard
- 2.Release clamp bolt of outside eccentric block
- 3.Eccentric blocks of both sides should rotate in the same direction so as to make the marking –off on shaft to align the marking-off value of exciting force on eccentric block and the required shock force value.
- 4.Tighten the bolt of eccentric block and install safeguard.

3)Operation and service

a)The motor rotates with 50Hz, AC. When motor rotates, observe the rotation direction of motor. If the rotation direction is not correct, adjust phase sequence. There are Two vibration motors on a linear vibration equipment and the rotation direction of two vibration motors are contrary.

b)After motor installed, accumulation running time which is within 100 hours is for the initial running period. During the initial running period, pay attention to tighten foundation bolts in every shift.

c)Motor control system should equip with reliable safeguard.

b)There should be reliable ground wire in motor.

4)Repair and maintenance

a)If abnormal sound in vibration motor is found during motor running, shut off motor at once and check trouble of motor. After trouble is removed, turn on motor again.

b) For ensuring normal operating of vibrating motor and preventing trouble from happening. vibration motor should be checked every two months. The method of check and repair is the as follows: Remove the dirt and soil stored in motor and clean wire packing and check whether insulation resistance in wire packing is fine and bearing was worn. If necessary, replace bearing and grease. Check whether ground wire, connector. all fitting and eccentric block are loose. If they are loose, tighten them. If working environment of motor is not good and very dirty, bearing should be cleaned every month and filled with grease every month.

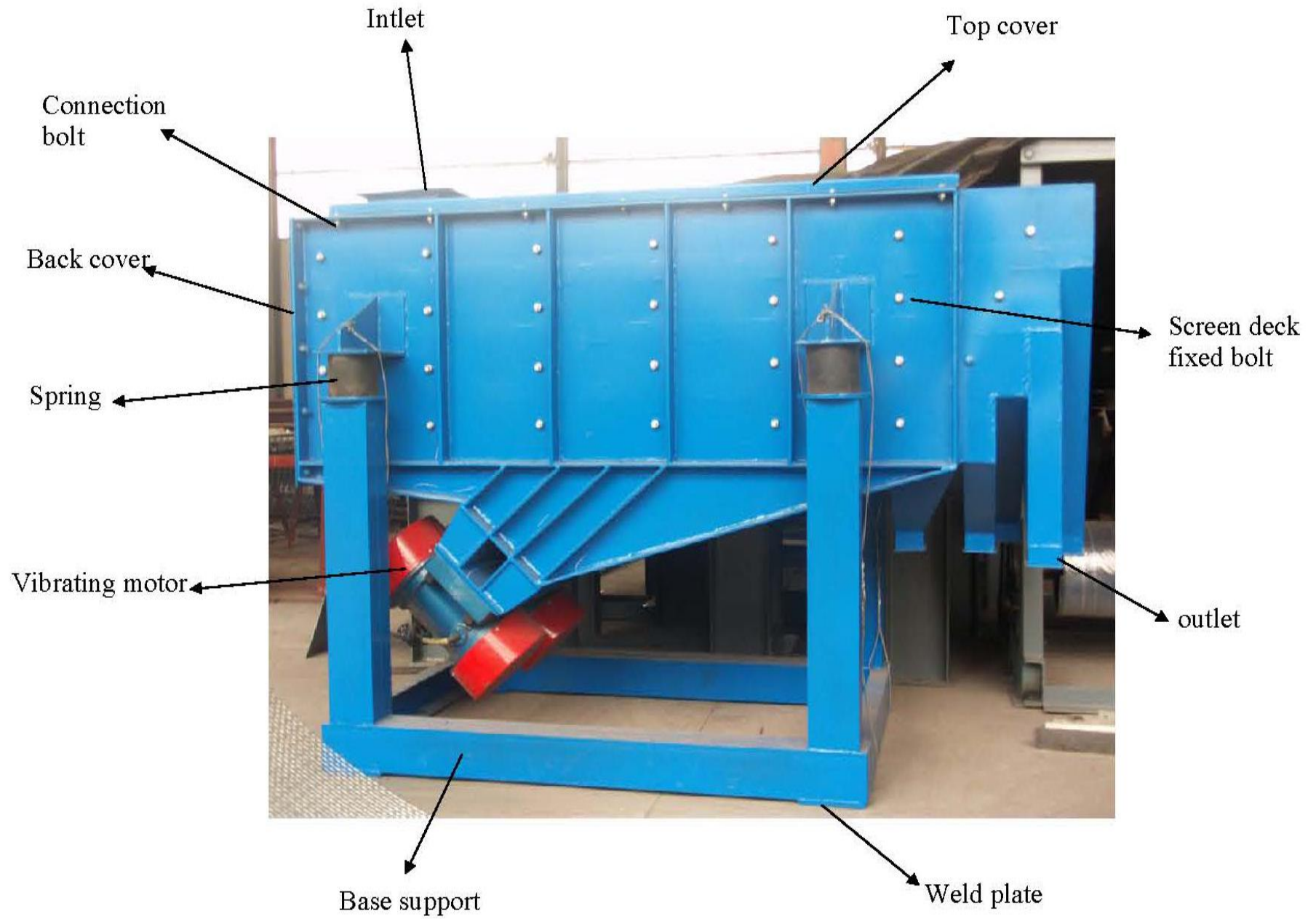
c)If motor operates over 3 hours every day, after accumulating 5000 hours of operation, replace new grease. Before replacing grease, clean bearing, housing and bearing and cover and fill lithium base grease into the inside and outsider chambers of bearing with 1/4-1/5

d)Axial float of vibration motor is allowed to be 0.3-1mm.

e)Mating precision of bearing and shaft is H6/F5.

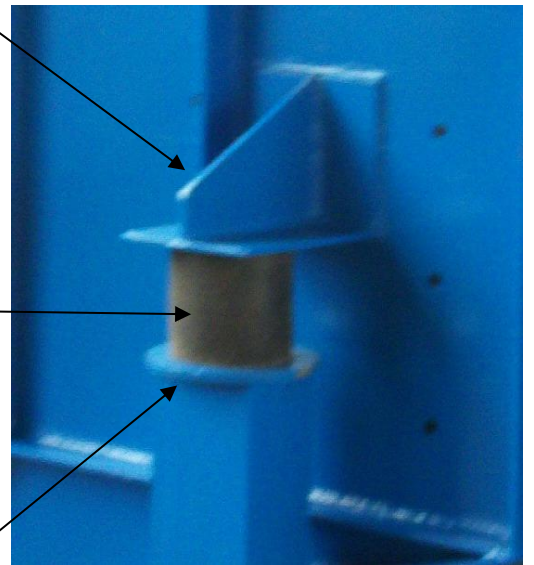
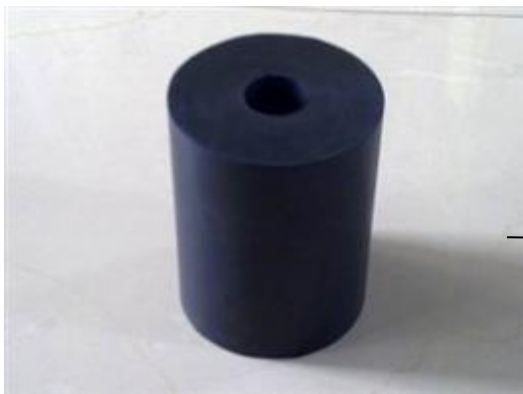
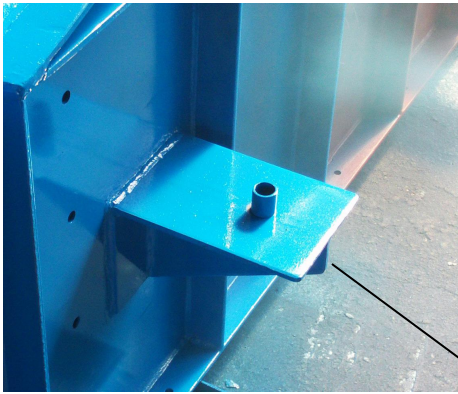
4. Technical parameter

voltage	frequency	Insulation class	Protection class	Phase	Rating
400V	50Hz	B	IP55	3	Continuous



Installation

1.Spring

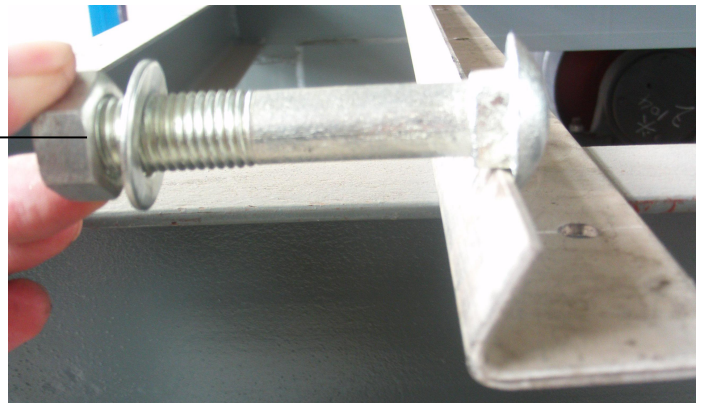


2 Screen deck

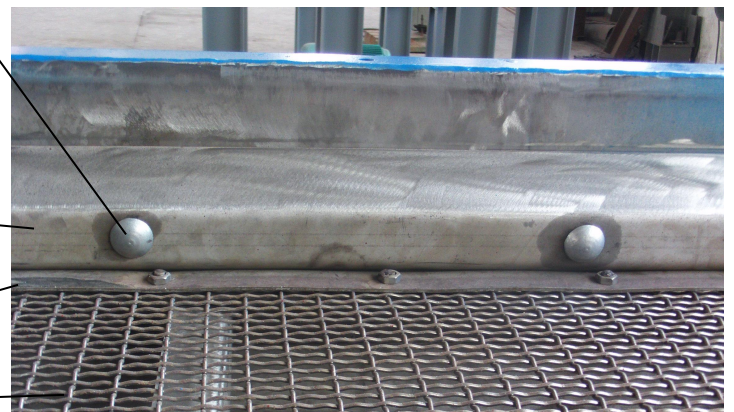
Support frame for screen deck



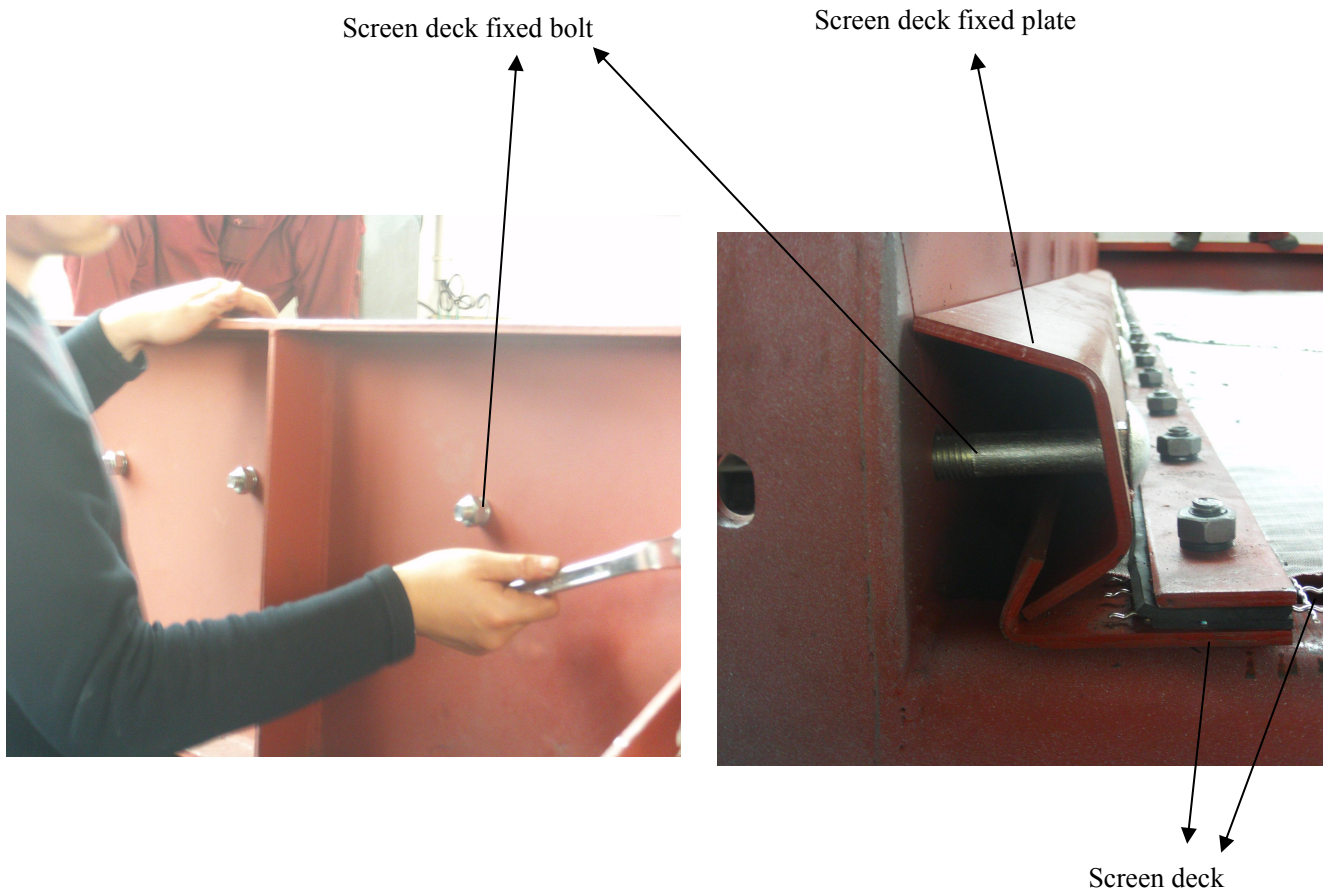
Screen deck fixed bolt



Screen deck fixed plate



Screen deck



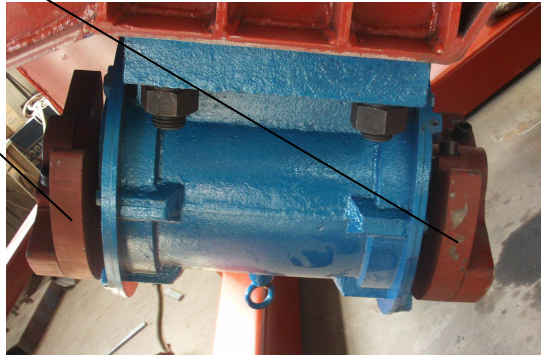
Adjust the screen deck fixed bolt to fix or loose the screen deck fixed plate.

If renew or clean the screen,do as following:

- 1 Open the back cover
2. Loose all the screen deck fixed bolt for the layer screen deck you need to clean
3. Then pull out the screen deck
- 4.Put back the screen after cleaning, then tighten the screen deck fixed bolt., close the back cover

Vibrating motor

Eccentric block



grease nipple



Adjustable bolt for eccentric block



Angle mark



Adjust exciting force

Along with the enlargement of angle of eccentric block, the exciting force will increase, the customer could adjust the exciting force base on factual operation situation.

1. Loose the adjustable bolt for eccentric block
2. Adjust the eccentric block angle base on request\
3. Fix the eccentric block again
4. Adjust the eccentric block angle in the other vibrating motor, must make sure the eccentric block in the two vibrating motor is symmetrical and have the same angle.