SFJH SERIES
ROTARY SCREENER

OPERATION MANUAL

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Important instruction:

1 This manual detailedly describes SFJH series rotary screener of each system structure, function and use and maintenance method. Before installation and use of the machine , customer should read the manual,and have a full understanding of the ministries and its structure and function ,then have operation and maintenance of the machine. Due to the continuous improvement of product structure, after a certain time period, the manual of narrative content and the actual situation of the products will have small changes.Users should pay attention to it.

2 Please propose your advice to us for melioration when finding quality problem or others.Thanks !

Ⅰ. APPLICABLE SCOPE AND PERFORMANCE FEATURE

1. Use, Application Scope

This series of Rotary Screener is used to screen and size the mash feed or pellet feed in feed mill, and also pre-clean the raw materials in feed mill and size after second grinding in large-and-medium sized feed mill. Additionally, they can be widely used to screen and size the raw materials and finished products in the industries of grain, food, chemicals, sugar making, mining, papermaking, etc.

2. Performance Feature

This machine adopts normal belt transmission method, resulting in less vibration and low noise, has less requirement to supporting frame. And since this machine combines the advantages of moving modes of circumferential, elliptical and rectilinear, and without screen surface cleaning device, resulting in high capacity and screening efficiency, low energy consumption. Moreover, this machine can be installed flexibly, and the screen can be replaced directly from the top, more convenient for screen replacing.

Ⅱ. MAIN SPECIFICATION AND TECHNICAL PARAMETERS

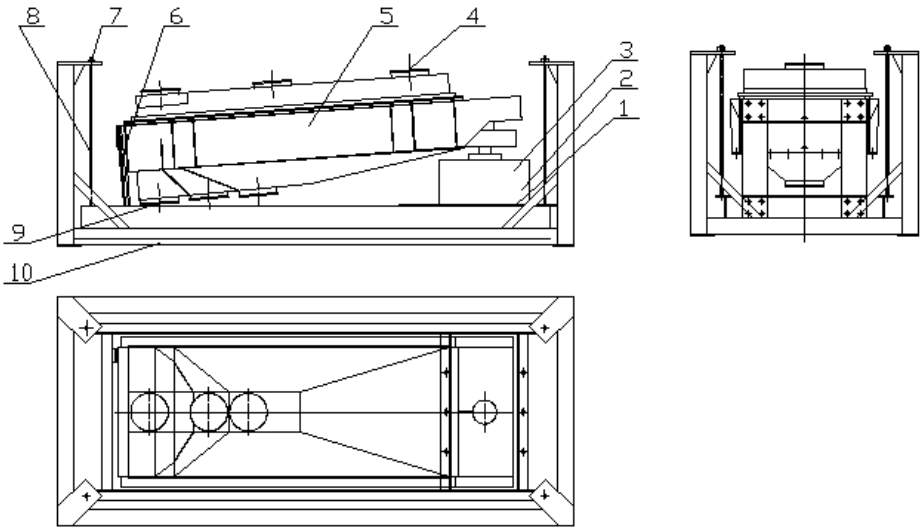
Model		80*2C	100*2C	110*2C	130*2C	150*2C
Screener hull L *W (mm)		1600*300	2140*1000	2230*110	2500*1250	2840*1500
Layers		2	2	2	2	2
Rotary radius(mm)		30	30	30	35	35
Power (KW)		2.2	2.2	3	4	5.5
Capacity (t/h)	Pellet	5-8	8-10	8-12	10-15	15-20
	Mash	3-6	6-8	7-11	8-13	14-17

Ⅲ. STRUCTURE AND WORKING PRINCIPLE

1. Main Structure

SFJH series rotary screener consists of machine frame, drive box, screener hull, sliding hemisphere support and hanging rod.

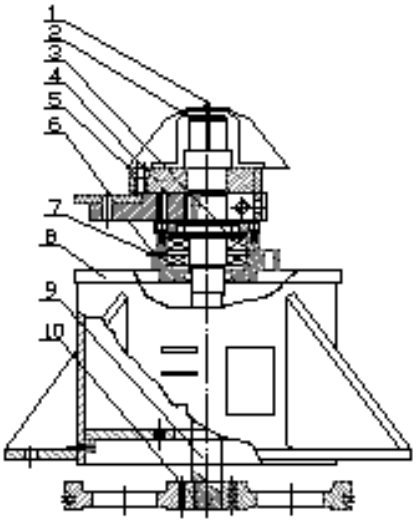
See Figure 1



1. Machine base 2. Motor 3. Drive box 4. Product inlet 5. Screener hull 6. Sliding support 7. Hanging rod 8. Hanging cable 9. Product outlet 10. Machine frame

Figure 1 Rotary Screener Structure

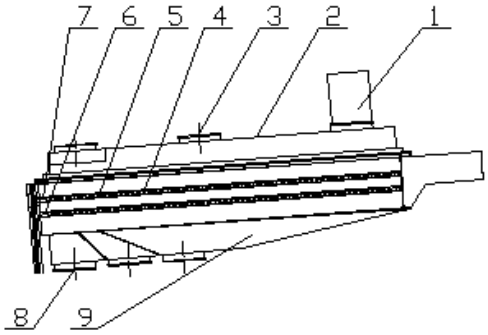
(1) The transmission device consists of motor and drive box, motor drives the eccentric shaft in drive box through V-belt, so realize the rotary movement of the front part of screener hull. The drive box consists of weight belt pulley, eccentric shaft etc. The weight of the belt pulley can be adjusted, for the balancing of inertial force generated by the movement combination of screener body (front part circumferential, middle part elliptical, end part rectilinear). Transmission device structure, see Figure 2.



1. Nipple 2. Pressing bush 3. Bearing 4. Eccentric wheel 5. Inner hexagon bolt 6. Nipple 7. Bearing 8. Box 9. Main shaft 10. Belt pulley

Figure 2 Drive device

(2) Screener hull consists of top cover, screener body, up and low screener deck. Structure see figure 3.



1. Product inlet 2. Top cover 3. Sight hole cover 4. Screener deck 5. Rubber ball 6. 7. Support rod 8. Product outlet 9. Screener hull

Figure 3 Screener hull structure

① The top cover functions as sealing for screener hull in one hand, for the other hand could press tight the screener deck. There are 4 sight holes on the top cover, could watch the moving situation of product and for overhaul.

② Screener body: Welded together by sheet steel, it makes an enclosed structure with the top cover; the products could be fully classified in the screener body.

③ Pressing mechanism: This mechanism consists of pressing handle, pressing mandril, hinge pin shaft, lock nut and base. This mechanism could realize the quick assemble and disassemble of screener deck by the clutching of pressing rod on the top cover, the pressing force could be adjusted by adjusting the length of screw.

④ Screener deck: It consists of wooden deck, woven screen fixed on deck, and cleaning elastic small ball. The constantly bouncing elastic balls bump against the screen and prevent products from blocking the screen mesh.

(3) Sliding hemisphere support

Sliding hemisphere support is to the west of screener hull product discharging end, functions as the support of screener hull, and allow the screener hull slide on the hemisphere. The support consists of hemisphere and hemisphere support socket. The hemisphere is made by carbon/ graphite material, no need to lubricate during working, with self lubrication function.

(4) Hanging support

The hanging support is installed at the end of screener, one end is fixed on the machine frame, the other end is fixed on screener body, and buffer rubber ring is installed inside the support bolt at the two ends of hanging support. The length of hanging support could be adjusted by nut.

2. Working Principle

The screener with inclination of 4° is driven by drive box, the moving track is circumferential at the inlet part, then gradually into elliptical moving mode in the same direction of screener length, finally at the outlet part moves in nearly rectilinear mode. Under the action of circular motion at the feeding end of screener, products fed concentrated are evenly spread across the full width of screen quickly and sized automatically, thus making the products with smaller size on the lower layer pass through the screen quickly, whereas making products with larger size move towards the discharging end. In the process of movement, there is no stir and vertical bounce, so

the smaller pellets always keep tight close to the screen face and can pass through the screen at any time. At the discharging end, the movement of screener body is approximately in reciprocating rectilinear motion. It makes the screening action gradually become weaker and thus makes pellets which are larger than screen mesh size quickly move towards the outlet until they are discharged out of the machine and the complete screening of product is finished. In the screening process, the constantly bouncing elastic small balls bump against the screen and efficiently prevent products from blocking the screen mesh and ensure a high efficient screening.

Ⅳ. INSTALLATION AND COMMISSION

1. Installation

SFJH series rotary screener installation sketch, see figure 4. The outline dimension, product inlet and outlet size and position of various models are different, could make layout according to the outline dimension of the selected model, and make the flow diagram according to the inlet size and position.

(1) Support installation: This installation method means using 4 hanging cables to hang the screener onto the machine base made by section steel, then fix it on concrete foundation with anchor bolt.

(2) Installation foundation: The installation ground must be flat and sturdy; the position of 4 foundation holes should be on the same level.

(3) Cable hanging method: Since the driving device of screener has passed balance test, this screener could be installed by cable hanging.

(4) Hanging cable: The hanging cable should be quality high strength steel wire rope, we recommend using 6*7-Tb-1- galvanized grade A - right twisting (GB1102-74)

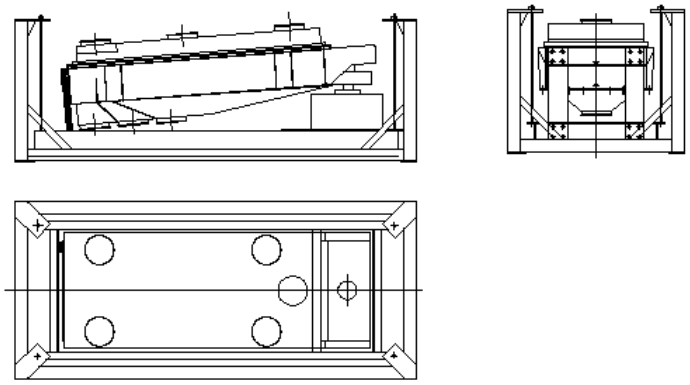


Figure 4 Sketch drawing

	A	B	C	D	E	F	G	H	I	φd	φb
SFⅡ80*2C	2980	1320	1060	2580	1120	620	280	280	290	190	180
SⅡ100*2C	3520	1520	916	3010	1210	620	280	280	290	190	200
SⅡ110*2C	4200	1780	1200	3980	1560	680	310	310	580	250	240
SⅡ125*2C	4210	2030	1200	3890	1810	950	350	350	560	250	200
SⅡ150*2C	5070	2130	1200	4650	1910	950	350	350	560	250	200

(5) Hanging cable length: When hanging, each steel wire rope should keep vertical, recommended hanging length is 150-300cm. For the convenience of adjusting the level of screener, it's recommended to install turnbuckle on hanging cable. In any cases, should use appropriate steel cable clip and steel ring.
(6) The hanging foundation must be solid and sturdy.

2. Adjustment

(1) The adjusting of screen pressing mechanism: By adjusting the length of screw could adjust the pressing force of pressing mechanism. After adjusting and pressed tight, should tight the lock nut.
(2) Adjusting of belt tension: See figure 5, the motor base consists of motor bottom base, adjusting support and adjusting bolt. First unscrew motor foundation bolt 5, then could adjust the tension force of V-belt with adjusting bolt 6.

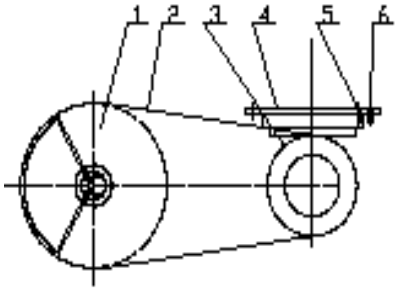


Figure 5 Adjusting of belt tension

1. Eccentric belt pulley 2. Belt 3. Motor 4. Motor base 5. Bottom bolt 6. Adjusting bolt

(3) Adjusting of screener inclination

In order to adjust the flowing rate of product on the screener surface, need to adjust the inclination of screener surface. Adjusting method: No. 1, insert washer between screener hull and slide plate; No. 2, insert washer between sliding bearing socket and support plate. Neither method used for adjusting, should not let the screener body bump the shaft socket when working.

(4) Adjusting of hanging support assembly

Loose the lock nut and retainer pin, adjust the length of the two support points of hanging support, so make the sliding ball not go out of sliding plate when screener is in the farmost position.

Ⅴ. OPERATION

1. Operator should be familiar with the characteristic of the machine, know its structure and the adjusting way and function of each operating point.
2. Before the machine is started, the connecting bolts of each part must be checked and any looseness is not allowed.
3. Products cannot be fed until the machine runs for 2- 3 minutes and there is no abnormality (e.g. sticking, touching, scraping).
4. If strong vibration, noise and excess rise of bearing temperature or other abnormality arise when the machine is running, the machine should be stopped at once for checking and finding the cause. Production cannot go on until the trouble is removed.
5. The machine cannot be used under excess load.
6. For different screening requirements, screens with different meshes should be used to meet the needs of capacity and quality.

Ⅵ. MAINTENANCE AND TROUBLESHOOTING

1. Maintenance

(1) Work in strict accordance with the operating way. The necessary checking and cleaning work should be done every shift.
(2) Often check the V-belt transmission to see if tension is proper. Replace V-belt in time when it is worn.
(3) An overhaul should be made after the machine runs for 1000 hours. Repair or replace when finding that parts of the machine, especially the driving parts, are damaged or seriously worn.
(4) When the machine will be laid aside for a long time, the inside and outside of the machine should be cleaned to prevent the machine from rusting and blocking the screen. In the meantime, remove the V-belt and loosen the fastening mechanism.

2. Common Troubles and Troubleshooting

No.	Trouble	Cause	Troubleshooting
1	V-belt heats	1. Tension of belt is not proper. 2. Pulley and groove are damaged, or the surface is rough.	1. Adjust the gap between motor shaft and main gear 2. Check and repair pulley
2	Bearing heats	1. Bearing lube is too much, too few or bad, bearing is damaged 2. Main shaft etc. bend or inertia force unbalanced 3. Outer ring of bearing does not match the bearing housing tightly 4. Belt is too tense 5. Long term run with excess load	1. Replace lube. Fill lube according to stipulation. 2. Straight the main shaft 3. Replace the parts matching with bearing 4. Adjust the tensionness of belt 5. Reduce the feeding volume
3	Motor runs weakly	1. Motor run in two phase 2. Motor winding is in short circuit 3. Long term excess load	1. Connect the short phase, to run in three phases 2. Check and repair motor 3. Make motor run under the rated load
4	Motor starts difficultly	1. Voltage is too low 2. Wire section is too small 3. Fuse is blown	1. Start after the power is normal. 2. Change a proper wire. 3. Change a fuse
5	Screener body strong vibrating	1. Balance is loosed 2. Main shaft bends 3. Bearing is damaged	1. Adjust the mounting position of balance. 2. Replace or align main shaft. 3. Replace bearing

6	Unqualified pellets in the finished products	1. Screen is damaged 2. Screener deck is not fastened or seal is not tight	1. Replace screen or repair holes. 2. Fasten the screener deck. Fill the leak.
7	Capacity decreases greatly	1. Moisture content of products is too high. Mesh blocking is serious. 2. Mesh size doesn't meet the requirements. 3. Rotational speed is too low or belt slips seriously. 4. Feeding volume is not sufficient.	1. Change products with low moisture content. 2. Replace screen. 3. Increase the rotation speed, adjust belt. 4. Increase the feeding volume

Ⅶ. TRANSPORTATION AND STORAGE

1. Machine should be packed for long distance transportation before leaving factory. When the machine is delivered for shot distance, whether packing case should be used or not shall be determined according to actual conditions, but the machine should be prevented from bumping and turning over during the transportation.

2. When the machine will be laid aside for a long time, it should be kept in a well-ventilated, dry and cool place, and there should be damp-proof facilities. The exposed surface not coated with paint should be coated with anti-rusting oil.

Ⅷ. EASILY-WORN PARTS (see table 1)

Name	Unit	Machine model	Qty.	Remarks
V-belt GB/T13575.2-92	pc	SFJH80*2C	2	L=1626
		SFJH100*2C	2	L=1626
		SFJH110*2C	2	L=1702
		SFJH130*2C	2	L=1702
		SFJH150*2C	2	L=1702
Bearing	pc	SFJH80*2C	1 for each	22210
				22214
				22309
		SFJH100*2C	1 for each	22210
				22214
				22309
Bearing	pc	SFJH110*2C	1 for each	22311
				22311
				22210K
		SFJH130*3C	1 for each	SKF22316E
				SKF22316E
				SKF22213ECH3137

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