



绿炬种机

GREEN TORCH SEED MACHINERY

使用维护说明书
OPERATION MANUAL

5XFHC 种子清洗车

**5XFHC SERIES SEED AIR-AND-SCREEN GRADING
CLEANER**

执行标准编号：NY/T 373-2011
Implemented standard No. NY/T 373-2011



石家庄市绿炬种子机械厂

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Shijiazhuang City GREEN TORCH Seed Machinery Factory

MADE IN CHINA

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1. Brief introduction

This series machine makes full use of the principle of wind sorting and screening, can effectively clean and classify all kinds of seeds, grains and legumes, remove light, large and small impurities.

The equipment adopts double dust separating system, effectively reducing dust pollution, sanitation with more environmental protection. In The same time dividing the goods seeds into different levels by size. Come out from different discharge gate. Client can choose the 3 layers or 4 layers screens depend on on needing.

The machine can be used to clean and grade seeds of various crops, such as wheat, corn, rice, bean, barley, sorghum and vegetable seeds.

2. Main technical parameters

Item	5XHFC3.0	5XHFC-5 A	5XHFC-5 B	5XHFC-7A	5XHFC-7B	5XHFC-10	5XHFC-10 B
Capacity	3000KG/H	5000KG/ H	5000KG/H	7000KG/H	7000KG/H	10000KG/ H	10000KG/ H
Powder	6.75KW	8.99KW	9.35KW	9.35KW	9.35KW	9.75KW	9.75KW
Screen layers	3layers	3layers	4layers	3layers	4layers	3layers	4layers
Cleaness improve	2%-5%	2%-5%	2%-5%	2%-5%	2%-5%	2%-5%	2%-5%
Selected rate	≥98%	≥98%	≥98%	≥98%	≥98%	≥98%	≥98%
Weight	1450KG	1850KG	2000KG	2200KG	2350KG	2250KG	2400KG
Size	4400*1990* 3230 (mm)	5073*200 8*3349(m m)	5073x2008 x3349(mm)	5500*2210 *3350(mm)	4473*2208 *3349(mm)	4930x2450 x3192(mm)	4930*2450 *3192(mm)

3. General structure and characters

1) The machine is composed of the elevator part, wind concentration part, screen selection part, electrical control part and the mobile base frame.

2) The machine is in compact structure ,easy to operate and can be moved by various vehicles.

3) Since the machine can be cleaned as a whole, mixtures could be removed easily and seed purity provided.

4) As an energy-saving machine, the machine can be operated with power supplied by a generator in areas where electricity can not reach.

4. Operation procedures

1) For moving from one place to another ,rotate the 4 screws(see Fig.14-14) to their top position and secure the screening machine to its frame by using the fixing bracket for transport .During movement, it's better to keep towing part slightly higher and maintain a speed generally below 10 Km/h per the road conditions allowed.

2) Position the machine on its leveled operation ground and adjust the 4 screws(see Fig. 14-14) to level it , as well as the machine needs the two wheels's support. Please loosen the red bolt of each screw if the screws can not be turned freely.

3) Before start-up, the transport fixture(see Fig. 1) marked with "DEMOUNT BEFORE START-UP" must be dismantled and preserved. Bolts , nuts and washers dismantled from the transport fixture shall be put into their original position.

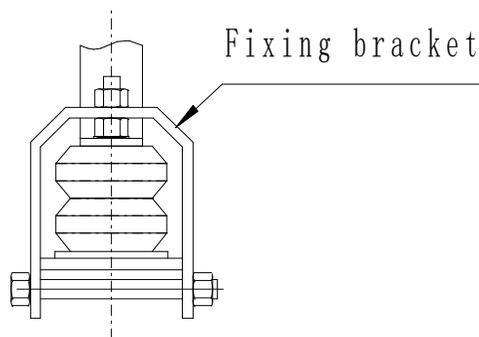
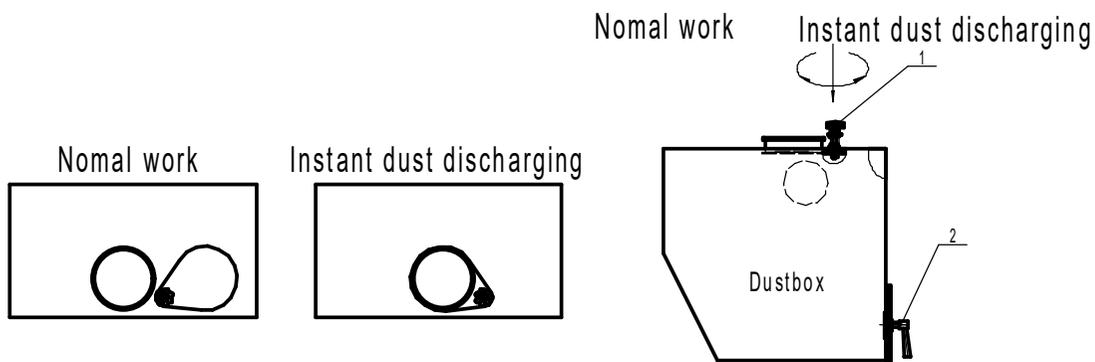


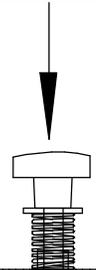
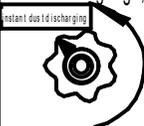
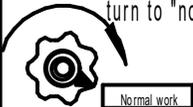
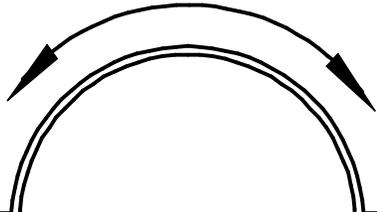
Fig.1

4) Connect power supply and touch the starting button to see whether the Motors's direction is correct.

5) Processing beginning, start in sequence the screening machine, wind blower , elevator. Feed the seed in the elevator hopper , and the seed be lifted high enough to enter the wind concentration part via the dispersion device. There the light impurities are separated and discharge from the pressure gate (Fig.14-16) and the remaining grains come to the screening part where bigger and smaller impurities as well as qualified seed are graded and finally discharged from their separate outlet into bags.

- 6) Dust discharge
- a) Discharge dust from dust box every day after work while the non-processed seed has a low dust content.



Operation of dustbox handle for dust instant cleaning		
<p>① Push down the handle</p> 	<p>② Contrarotate the handle to end, make the red arrow turn to "instant dust discharging", open dustbox gate to cleaning.</p> 	<p>③ Close the dustbox gate when cleaning up, push down the handle, turn it clockwise to end, make the red arrow turn to "normal work"</p> 
<p>Instant dust discharging</p> 	 <p>绿炬</p> <p>☎ Tel: 0311-86083433 86086793</p> <p>Add.:175 victory street shijiazhuang china</p>	
<p>Normal work</p>		

If the non-processed seed has a high dust content, and the dustbox is full in working , follow the procedures thereafter.

Push down the dustbox handle , turn it counter-clockwise to the end. Make the red arrow symbol direct to the position of “instant dust discharging”

Open the dustbox gate discharge dust.

Close the dustbox gate immediately when finished, push down the dustbox handle , turn it clockwise to the end. Make the red arrow symbol direct to the position of “normal work”.

7) If the machine is used purely for grading purpose, follow the procedures described in item after changing the screens. In this case , attention should be paid to the control of feed amount.

8) To pulse the operation , stop the machine parts in a reversed sequence of the start, i.e. the elevator, wind blower ,screening device and finally the power. Stop the power circuit breaker first in case of emergency.

9) End the operation

a) Stop feeding the intake hopper.

b) Stop the elevator.

c) Pull out the cleaning gate at the bottom of the elevator.

d) Start the elevator again and idle it for a few minutes to clean .

e) Stop the elevator and put back the cleaning gate.

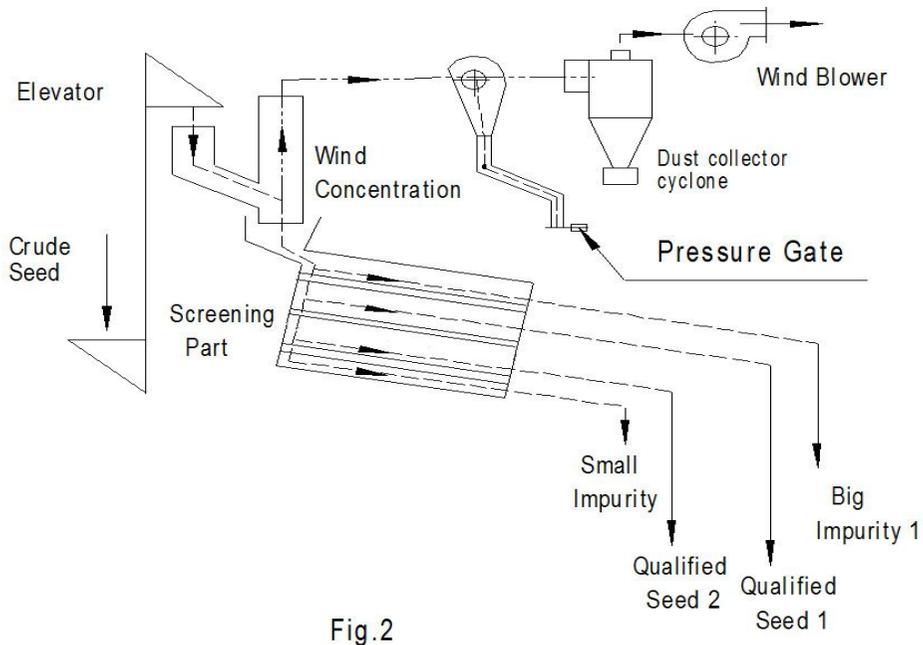
f) Stop the wind blower.

g) Let the screening machine run until no seeds in it .

h) Pull out the screen plates to clean if necessary.

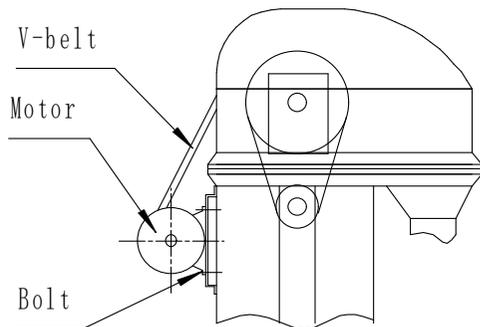
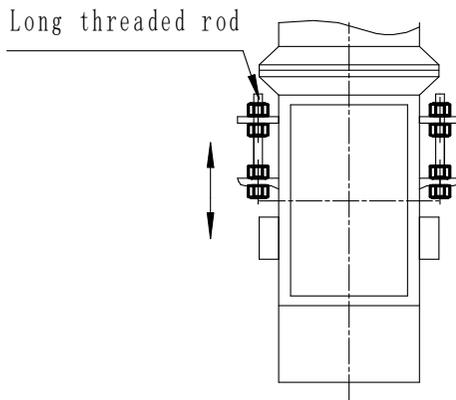
CAUTION: The transport fixture must be used when the machine moving one place to another.

5. Sketch diagram of the processing flow



6. Adjustments

1) Adjust the towing device of the elevator(see figure 3).



By adjusting the regulating bolts and nuts at both sides of the elevator base, the driven shaft can be moved up and down to keep the towing device at its best operation position.

The towing device will run aside if the driven shaft is not in parallel with its driving one at the head part.

The towing device becomes loose if the driven shaft moves up and vice versa.

The principle for adjusting this device is: The tightness or tension is just enough

to prevent its parts from touching any others during its running. The towing belt should not be tightened excessively, otherwise the broken rate will increase.

2) Adjust the V-belt of the elevator(see figure 4).

- a) Dismount the belt cover.
- b) Loosen the fixing bolts of the motor.
- c) Move the motor up or down to make the belt reach its standard tightness(push the belt hard and it gives but a deform of about 10 mm).
- d) Tighten the motor's fixing bolts and mount back the belt cover.

3) Wind blow adjustment

Wind blow can be adjusted by the adjustment handle according to different materials(see figure 5).

4) Wind concentration part adjustments(see figure 6).

The change of wind speed is controlled by the size of section area of the wind channel. By adjust the handles upside and underside of the wind channel the state of the best seeds wind concentration effect can be found.

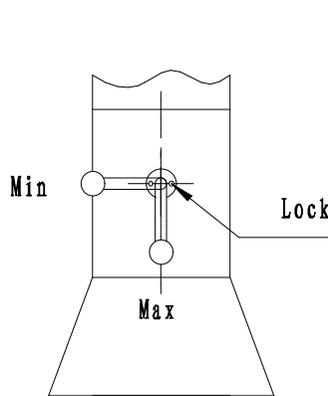


Fig.5

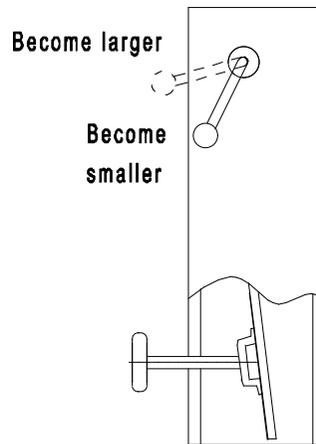


Fig.6

5) Adjustments of the dispersion device

There are two handles at the sidepiece and the backside of the dispersion device (see figure 7). The equality handle at the sidepiece of the dispersion box is used to adjust the size of dispersion outlet. If the granularity of original seeds is small in order to get equality dispersion you can turn the handle down. But at the same time the capacity will decrease. The distributing handle at the backside of the dispersion device is used to get equality dispersion. Regard that the two handles should be used cooperative. There are two covers at the top of the dispersion device. You can make an observation of seed cleaning when the machine power off.

6) Adjustment of the vibration amplitude

Dismount the covers at both end of the vibration motor, adjust the included angle

of both weights. When the angle decreases, vibration amplitude becomes larger and vice versa(see figure 8).

Warning:

- a) The angle of the same vibration motor at both ends must be equal and absolutely overlap with each other along the shaft line direction.
 - b) Take the center line of the machine body as the shaft line, the fan-shaped weights of the vibration motors at both sides must be symmetry.
 - c) Rotation direction of the two vibration motors must be opposite(see figure 9).
- The machine is generally adjusted to 3.5~4.0mm upon delivery.

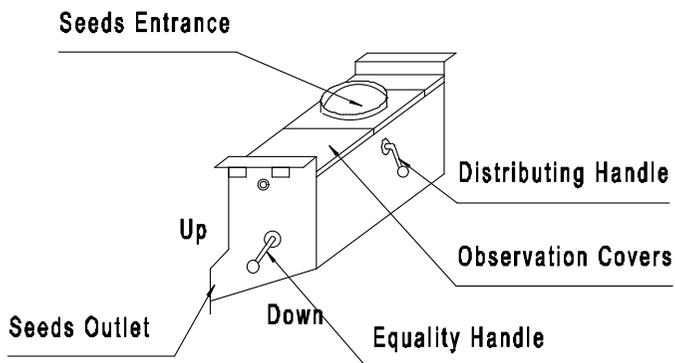


Fig.7

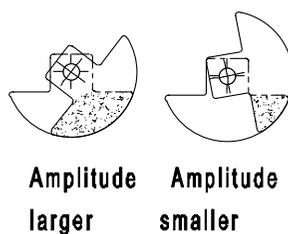


Fig.8

7) Adjustment of the vibrating direction angle

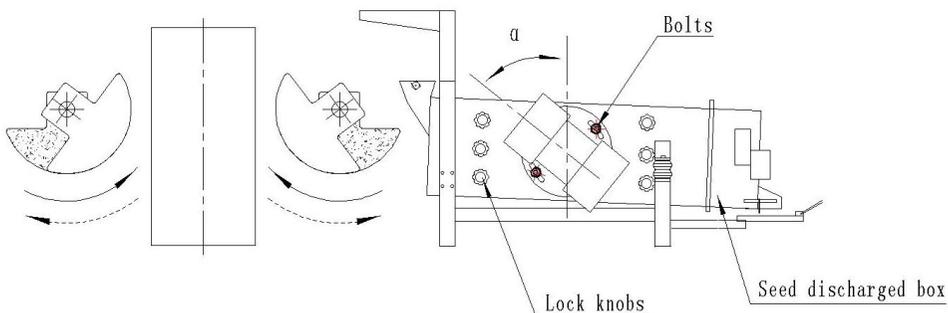


Fig.9

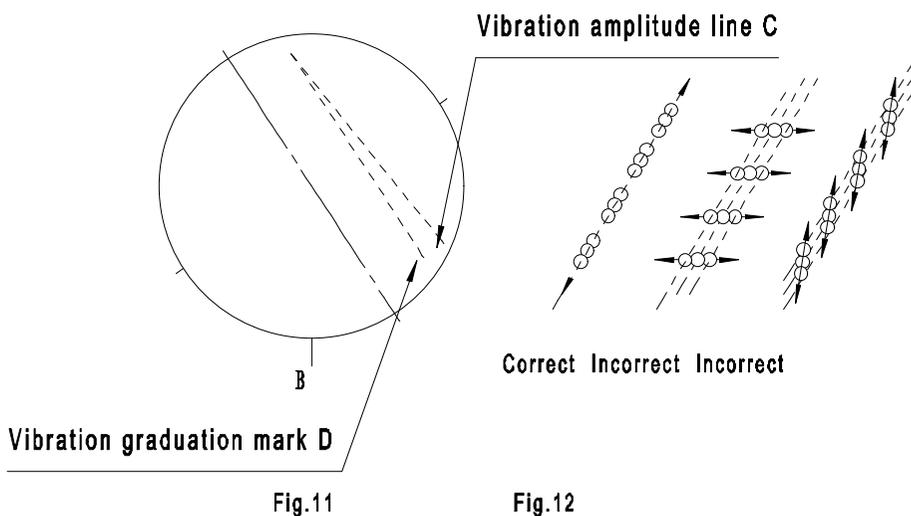
Fig.10

To adjust the vibrating direction angle is actually to change the included angle α (see figure 10) between motor shaft line and the machine body . To achieve this, loosen bolts, turn the direction adjusting disk to the required angle α by reading its grade marks and then ,tighten the bolts.The direction angle commonly is $10^{\circ}\sim 15^{\circ}$. Attention must be paid to symmetry of the two motors.

8) Use and adjustment of the indication panel

The indication panel was fixed at the left side of the machine (see figure 11). The connecting line passing through those four small circles on the indication panel indicates the vibration direction. When the machine vibrates, the center connecting line of the virtual circles overlaps exactly with the real connecting line (see figure 12). In this case ,the reading pointed by the vertical line OB(from the center point O of the panel downward to point B) is the vibration angle (see figure 11). If the above-mentioned two connecting lines can not be overlapped , loosen the fixing bolt and turn the panel to its correct position and tighten the bolt thereafter.

The grade marks D on the panel (see figure 11) indicated value of the vibration amplitude. When the machine vibrates, the virtual line C intersects with line D ,and the reading at the intersection point is the value of the vibration amplitude.



9) Change screen plates

Dismount the seed discharging box (see Fig. 10), loosen those 4 big knobs at both sides of the machine and pull out the screen . Then ,remove those butterfly nuts and the pressing plate, take out the original screen plate and mount a new one. Put back all the components in the reversed order.

10) Adjustment of the pressure gate at the bottom of light impurities discharging pipe

In order to prevent blowing conversely the outlet of light impurities discharging pipe must be keep airtight when impurities discharged normally. By adjust the leverage of the pressure gate , the cumulate height of light impurities in the pipe push the gate open some degree. At the same time for light impurities out continuous, the light impurities prevents wind from the gate.

7. Maintenance and safety rules

Adhere to the principle of “safety first and putting prevention first” in the production to ensure the safety.

- 1) Please carefully read this operation manual before work.
- 2) Electrician must inspect all electric systems before work, three phase/4-wire system has to be adopted and the machine must be earthed reliably.
- 3) Before operation, various kinds of protective shields, covers and nets must be properly installed as required and it is strictly forbidden for moveable parts to run in an exposure status.
- 4) It is strictly forbidden to feed big hard matters, rods ropes or wire into the elevator to prevent parts from being damaged.
- 5) It is strictly forbidden to directly stir grains over the guide slots of flashboard by hand or other tools when there are not many grains remained in the elevator hopper in order to avoid hand injury and elevator damaged.
- 6) The elevator cleaning board(see Fig.15-31) must be inserted in or taken out until the machine stops completely.
- 7) If the machine gets trouble, it must be stopped to check and maintain. It is strictly forbidden to shoot troubles in the operation.
- 8) In case the power supply is broken off suddenly during operation , the electric power (the switch in the switchgear box) must be cut off in time to avoid an accident caused by suddenly start-up of the machine.
- 9) Check all bolts and nuts for looseness and if any , tighten them immediately.
- 10) Take care to clean light impurities on the protective net at the outlet of the wind blower to prevent the air flow from being affected.
- 11) Fill the grease cup once every shift.
- 12) Grease each rotary part after every production season.
- 13) For storage, park the machine in a workshop with tyres lifted from the ground.
- 14) Air-pressure in both tyres should be always equal.
- 15) The pressure gate(Fig.14-16) must not be open when working.

8.Maintenance data

Description	Part	Standard	Specifications	Quantity	Remarks
Bearing	Elevator	JB-1635-76	F90505	4	Head, Base
Rubber spring	Screen part			4	
Rubber ball	Screen plate			8/small case	

9. Trouble and solution

Symbols	Trouble	Causation	Elimination
1	Could not start the switch	Voltage low	Measure and adjust
		Switch damaged	Replace a new one
2	No light impurities discharged	Discharging pipe wall up or leverage exorbitance	Stop and clean discharging pipe or adjust the leverage
3	Big and small impurities can not be separate	Screen plate wall up	Stop and clean the screen plate
4	No light impurities or certified seed among the light impurities	Position of wind adjustment gate changed	Adjust the position of wind adjustment gate
5	Yawp in the fan	Waste on the Impeller of the fan	Stop and clean Waste on the Impeller of the fan
6	Unconventionally vibration of the screen plates	Screen lock set not locked	Screw the knob for screen lock tightly
7	No wind while Windblower runing	Motor direction reverse	Adjust lead
8	Dust sedimentation no effect	Dust outlet is not airtight	Increase the pressure of pressure gate

10. Documents , spare parts and tools

- 1) Operation manual :-----1
- 2) Quality certificate:-----1
- 3) Spanners:24---27-----1
10—12-----1
- 4) Adjustable wrench: 200mm----- 1
- 5) Grease gun:-----1
- 6) Screwdriver:-----1
- 7) Hexagon ring spanner: 3mm-----1
- 8) Observation window glass:-----3

11. Electrical system

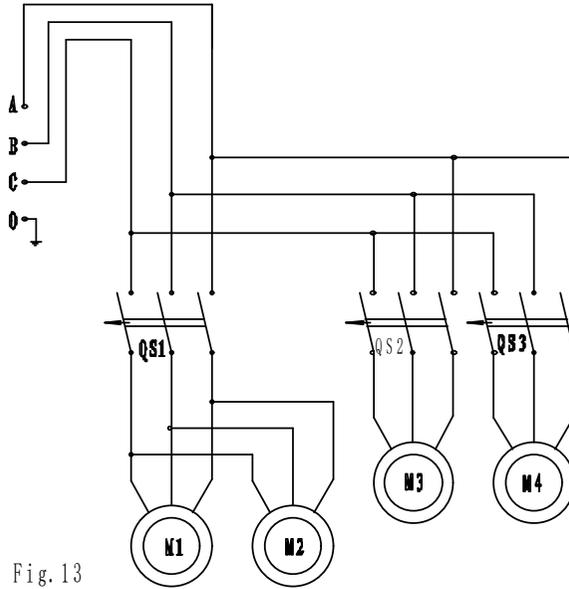


Fig. 13

Symbols	Description	Model	Specifications	Q'ty	Remarks
M1	Vbration motor	ZU-5-6	0.55Kw/380v50Hz	1	Screening machine
M2	Vbration motor	ZU-5-6	0.55Kw/380v50Hz	1	Screening machine
M3	Motor	Y132s1-2	7.5Kw/380v50Hz	1	Wind blower
M4	Motor	Y90s-6	0.75Kw/380v50Hz	1	Elevator
QS1	Circuit breaker	DZ47-60	3A	1	Screening machine
QS2	Circuit breaker	DZ47-60	25A	1	Wind blower
QS3	Circuit breaker	DZ47-60	3A	1	Elevator