

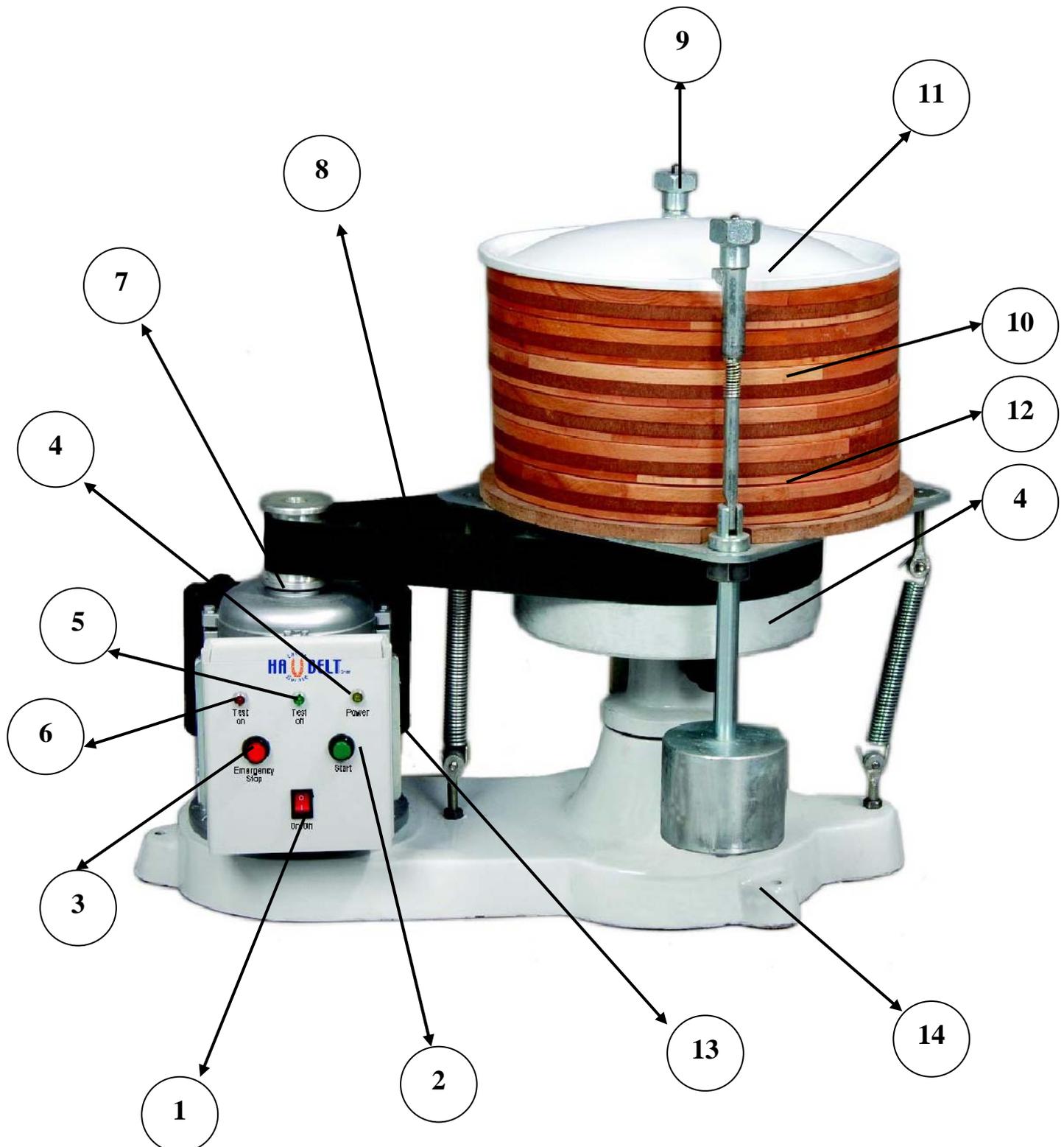
Laboratory Sifter



CONTENTS:

- 1. Device Introduction**
- 2. Security Information**
- 3. Apparatus Given by the Device**
- 4. Sieve Method**
- 5. Installation Instruction**
- 6. Testing**
- 7. Calculation and Evaluation of the Results**
- 8. Maintenance Instructions**
- 9. Breakdowns and Solutions**

Laboratory Sifter



1. DEVICE INTRODUCTION

1. POWER

Used for supplying electricity to the device and cutting the electricity of the device.

2. START

Button used for initiating the testing operation.

3. EMERGENCY STOP

Used for stopping the device or ending the testing operation in emergency states.

4. POWER LIGHT

Displaying that the device is supplied with electricity.

5. TEST ON LIGHT

Displaying that the device is testing.

6. TEST OFF LIGHT

Displaying that the device ends the testing operation.

7. DEVICE ENGINE

The lock system preventing the cover of the device from opening in the testing operation.

8. BELT

Providing the engine movement to the device.

9. CLAMPING SCREWS

Prevents the pulleys mounted to the device from dislocating during operation.

10. PULLEYS

Wooden pulleys to which the silks providing the samples to be sieved shall be mounted.

11. COVER

Used for preventing the powder products from dust emission during analyzing.

12. SUMP CASE

Used for storing the sieved powder products after analyzing.

13. CONTROL BLOCK

The control box directing the operation of the device in the testing operation.

14. DEVICE CASE

The frame of the device

2. SECURITY POLICY :

Our Company has made principle the quality and security in the fabrication it implemented providing your satisfactory who are our valuable clients as main condition. Our Company continually maintains **research and development** activities by means of its professional staff it established in its scope by closely following the innovations both in the country and abroad for the purpose of increasing the client satisfactory in the devices it manufactured by benefitting from the recent opportunities of technology.

Our Company has registered that it makes production in compliance with the European Standards by obtaining the **CE** (European Standards) certificate.

Our Company increases its growth rate every year and shall continue to provide services of high quality and security to our valuable clients by keeping up with the globalized world conditions by the support of our valuable clients.

Security Information:

- Use the sieve shaker with 110/220 Volt / 50/60 Hz grounded mains voltage.
- Use the sieve shaker on a smooth and solid surface.
- Since the sieve shaker operates as vibration, fix the device onto the ground by means of screws through 3 fixing holes on the base of the device.
- Don't touch the device in order to avoid injuries that might arise from the striking before the sieve shaker stops completely.
- Keep the power button off when the device is not operating.
- The sensitivity of the keys of the device has been adjusted as 0.5 second. For this reason, take care of pushing for 0.5 second while using the keys of the device.
- Don't have flammable and liquid substances on or close to the device.
- Don't try to remove the samples from the device before the sieve shaker ends the testing operation and gives sound warning.
- Don't allow other people than the operator to use the sieve shaker.
- Don't allow unauthorized people and companies to interfere in the device.
- The user should read and apply the maintenance instruction before working
- Call for technical service support when you encounter any problem.

3. APPARATUS GIVEN WITH THE DEVICE

3.1. If to be used in Powder products:

1. Wooden Pulleys	8 ITEMS
2. Sump Case	1 ITEM
3. Cover	1 ITEM
4. Silk Sieves	Optional
5. Operating Manual	1 ITEM

3.2. If to be used in hard (stone, metal, spice) products:

1. Aluminum Pulleys	5 PAIRS
2. Sump Case	1 ITEM
3. Cover	1 ITEM
4. Metal sieves	Optional
5. Operating Manual	1 ITEM

4. SIEVING METHOD

4.1 OBJECTIVE

One of the most important quality factors in wheat flour is the particle size. The objective of the method is the ability to produce flour in the standard particle size every time by observing the particle size of the wheat flour. The information about the granulation of the flour sample is obtained with the Sieve Shaker by working on the few sample in a short period of time.

4.2 DEFINITIONS

SILK SIEVE: These are the polyester sieves in the appearance of fabric in the diameters of various holes used in sieving dust samples such as flour.

METAL SIEVE: These are the metal sieves in the diameters of various holes used in sieving hard samples such as spice and metal.

GRANULATION: This is the % rate of the particle size of the hard and dust samples.

4.3 PRINCIPLE

The polyester sieves of various sizes are mounted to the wooden pulleys as the widest to remain at the top. The flour sample to be tested is unloaded to the top of the polyester sieves and the device is operated for 5 minutes with standard oscillation and at the end of the period it is calculated that how many % of the sample is sieved (that is the on-sieve and bottom-sieve percentages are calculated). Hence, the particle size is calculated. This process is repeated every time and the same value is desired to be found every time. The more different the values are, the more changed the homogeneity of the product is. It is desired to produce homogeneity products in the standard particle size all the time.

4.4 POINTS TO CONSIDER CONCERNING THE METHOD

4.4.1. Test Temperature:

The ambient temperature in which the testing operation shall be executed is required to be normal room temperature. This temperature should be 23 ± 1 °C.

4.4.2. Test Period:

The test period of the device is 5 minutes. At the end of this period, the device stops automatically. Since our device works as vibration, this period is an adequate period for sieving.

Laboratory Sifter

4.4.3. Operating Speed:

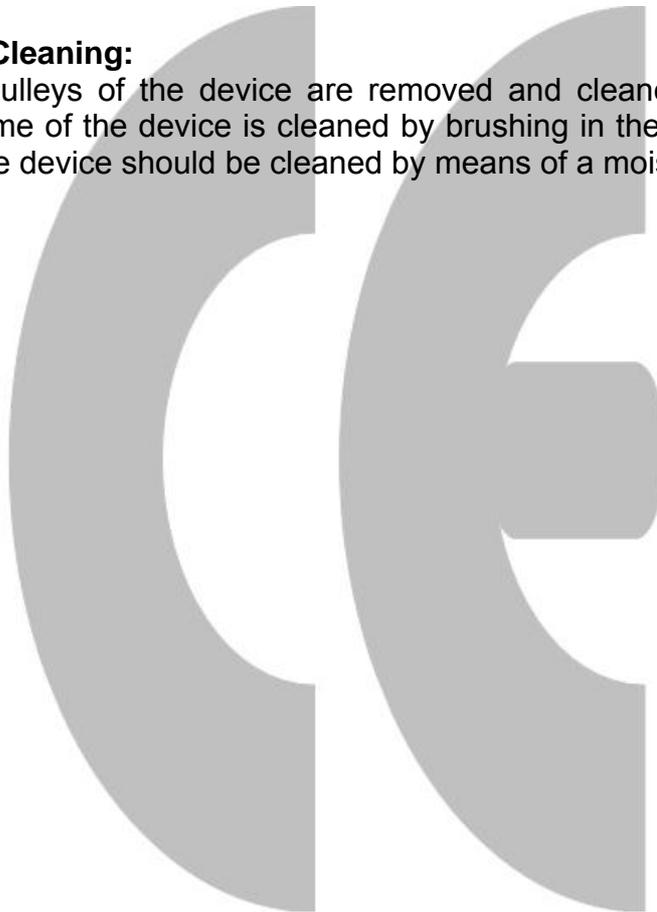
The standard operating speed of the device is 185-190 speed/minute. Otherwise, the obtained values are not accurate.

4.4.4. Locating:

For the purpose of sieving from top to the bottom, the sieve with the coarsest pore is located at the top. The sieve whose sieve diameter is less one unit is located at the bottom so that the sieves are ordered from top to the bottom, from greater diameter to smaller diameter. Afterwards, the dust or hard samples are laid and unloaded onto the top of the polyester sieves. The cover of the device is closed and its screws are clamped and the device is made ready for the operation.

4.4.5. Device Cleaning:

The wooden pulleys of the device are removed and cleaned by means of a fiber brush. The frame of the device is cleaned by brushing in the same way. Afterwards, the frame of the device should be cleaned by means of a moist fabric.



5. DEVICE INSTALLATION:

Place the device on a solid and smooth surface. Fix the device onto the ground through 3 holes on the bottom platform of the device. Hence, the device is prevented from shaking.

If wooden pulleys shall be used, the polyester sieves are penetrated to the wooden pulleys with staple. Afterwards, the polyester silk and wooden contact points are pasted so that sample transition to the other sieve and incorrect results are prevented.

The empty one of the wooden pulleys of the device is placed into the pit slot on the platform of the sieve shaker and sump case is placed onto it. The other pulleys are placed as the pulley with the coarsest pore to be at the top. The aluminum cover of the device is located at the top of the pulleys and it is clamped with 2 clamping screw at the sides of the device.

If aluminum devices shall be used in the device, the metal sieves are placed between two clamped aluminum pulleys and clamped by pressing by hand on a smooth surface. Hence the sample transition to the other sieve and the incorrect results are prevented.

The empty one of the metal pulleys of the device is placed into the pit slot on the platform of the sieve shaker and the sump case is placed onto it. The other pulleys are placed as the pulley with the coarsest pore to be at the top. The aluminum cover of the device is located at the top of the pulleys and it is clamped with 2 clamping screw at the sides of the device.

Afterwards plug the Power cable into the socket. Turn on the Power switch on the control block of the device. Note that the ground onto which the device is placed is dry.

There shouldn't be excessive heat and electromagnetic wave source (**stove, electrical motor, magnet etc.**) in the space onto which you place the device and its surrounding. No liquid substance is poured into the device and the space onto which the device is installed should be dry.

The network characteristics to which the device is connected should be **220 Volt 50/60Hz (AC)**. The socket to which the device is connected after being installed should be **grounded socket** for the purpose of not affecting the operator by phase leakage that might arise from any reason on the device and by static voltage shock that might occur due to magnetic area leakage.

NOTE:

The breakdowns that might arise from not obeying the aforementioned conditions are not within the scope of the warranty.

6. TESTING :

6.1 NECESSARY CHEMICALS AND APPARATUS

*Spoon

*Scale with the sensitivity of ± 0.01 gr

*Sieve Shaker of  trademark, 8000 model

6.2. PREPARATION OF THE FLOUR and SPICE SAMPLE

The flour and spice sample brought to the laboratory is put into empty covered can with volume of at least two times of its own volume. The cover of the can is closed, the samples are made homogeny by shaking for 1 minute. Hence, the flour and spice samples are made ready for sieving test.

6.3. SIEVING TEST

The empty one of the metal pulleys of the device is placed into the pit slot on the platform of the sieve shaker and the sump case is placed onto it. The other pulleys are placed as the pulley with the coarsest pore to be at the top.

2 clamping screws at the sides of the device are reversed and unscrewed. The cover of the device is removed and sample of 50 gr from the sample made homogeny in the homogenization can is scaled on the scale with the sensitivity of 0.01 gr and unloaded onto the sieve at the top of the device. Afterwards, the aluminum cover of the device is closed and clamped with 2 clamping screws on the sides of the device.

By turning on the power button, the electric current is provided to the device. The electric current is monitored with yellow light on the control block visually. This yellow light continues to be on until the power button of the device is turned off.

In order to operate the device, the "Start" button on the device is pushed once. At the same time, the "Test On" button lights as green. This light is on for the test period of 5 minutes. At the end of the test period of 5 minutes, the red "Test Off" light is on and the buzzer ends the test by giving sound warning for 3 times. Our sample is ready for scaling.

6.4. SCALING

After sieving process in the SIEVE SHAKER of  8000 model,

2 clamping screws at the sides of the device are reversed and unscrewed. Beginning from the top of the device, the samples remaining on the sieve are taken by means of a spoon and scaled on a scale with the sensitivity of 0.01 gr and noted. After the samples in the sieves are scaled, the same process is implemented for the sump case at the bottom part and the scaling rates are recorded separately.

WARNING: Note that the scaling should be accurate and the results shouldn't be mistaken.



7. CALCULATION OF THE RESULTS:

On-sieve scaling recorded separately for every sieve is calculated by placing them in the following formula.

$$\text{Sieve Rate ... \%} = \frac{\text{...sample amount not sieved gr}}{\text{Overall sample amount gr}} \times 100$$

Example 1: Sample amount not sieved with the Sieve No 9 is 10 gr
Overall sample amount is 50 gr

$$\text{Rate of Sieve No 9 ... \%} = (10 / 50) \times 100 = 20\%$$

Example 2: Sample amount not sieved with the Sieve No 10 is 20 gr
Overall sample amount is 50 gr

$$\text{Rate of Sieve No 10 ... \%} = (20 / 50) \times 100 = 40\%$$

Every value obtained as a result of the calculation process provides the sieving rate of that sieve as percentage.

7.1. EVALUATION OF THE RESULTS:

The sieve rates calculated in the flour factories are desired to be same every day or to provide 15% difference at most. Otherwise, it means that there has been a problem in the grinding systems of sieving systems of the factory. In order to find the problem, it is required to control the roller settings and whether there is tear in the sieves.

Furthermore, the sieve rate of the sieve no 7 is desired to be $\geq 98\%$ in the flour for bread in accordance with the standards. Otherwise, the enterprise is fined.

It is found that whether the flour is with thin granule or coarse granule by the calculations made with sieve analysis. It has several impacts for the energy value in the water-holding capacity of the flour. For example, thin-granule flour is manufactured for francala bread, but coarse-granule flour is manufactured for pastries, pies etc.

Repeatability:

In the sample of first and second flour under the same conditions in the Sieve Shaker by the same user, the difference up to 10 % point between the rates of sieve is normal.

8.MAINTENANCE INSTRUCTION:

You who are our valuable clients have been provided with quick and efficient results without delay by means of the ergonomical design and usage facility of our Sieve Shaker. Please consider the following maintenance instructions for the purpose that the Sieve Shaker shall provide quick and accurate results to you who are our valuable clients.

For the Attention of the User Operator:

After the device stops entirely, turn off the power button. Remove the sieves and sump case of the device and remove their dust by means of a paint brush on a dustbin. Afterwards, replace the sieves and sump case. Clean the control block of the device and exterior and frame of the sieves with a moist fabric and then dry them carefully by means of a clean and dry fabric. Execute this process after every operation. While cleaning the device, don't use water under any circumstances and ensure that whether the power connection is disconnected or not.

When the power button of the device doesn't work, keep the button off and increase the operation life.

Place the device on a dry ground and avoid the possible electrical leakage.

The aforementioned maintenance instructions are the responsibility of the user operator. The incorrect results that the User Operator obtains from the samples without obeying the maintenance instruction in the Sieve Shaker are not under the responsibility of our Company.

9.BREAKDOWNS AND SOLUTIONS:

Question:

- The Sieve Shaker doesn't work.

Answer:

- Ensure that whether the power cable of the Sieve Shaker is plugged into the power line completely or not.
- Ensure that whether the power button of the Sieve Shaker is on or not.

Question:

- When pushing the start button of the sieve shaker, the device doesn't work.

Answer:

- Control whether the start button is breakdown or not.
- The program of the device may be breakdown. Apply to the relevant technical service.

Question:

- When pushing the Emergency Stop button of the sieve shaker, the device doesn't stop.

Answer:

- Control whether the Emergency Stop button is breakdown or not.
- The program of the device may be breakdown. Apply to the relevant technical service.

Question:

- The Power light is not on.

Answer:

- Ensure that whether the power cable of the Sieve Shaker is plugged into the power line completely or not.
- Ensure that whether the power button of the Sieve Shaker is on or not.
- Control whether the power light of the device is breakdown or not.

Question:

- The Test On light is not on.

Answer:

- The Start button may be breakdown.
- The program of the device may be breakdown. Apply to the relevant technical service.
- Control whether the Test On light of the device is breakdown or not.

Laboratory Sifter

Question:

- The Test Off light is not on.

Answer:

- The program of the device may be breakdown. Apply to the relevant technical service.
- Control whether the Test Off light of the device is breakdown or not.

Question:

- The Sieve Shaker doesn't give signal.

Answer:

- Ensure that whether the voltage connection cable between the electronic mother board and buzzer of the Sieve Shaker is connected.
- Ensure that whether the buzzer works or not.

Question:

- The Sieve Shaker doesn't test for 5 minutes.

Answer:

- The program of the device may be breakdown. Apply to the relevant technical service.

Question:

- The Sieve Shaker moves.

Answer:

- Ensure that whether 3 fixing screws located at the base of the Sieve Shaker is clamped or not.
- Ensure that whether 2 clamping screws fixing the sieves and cover of the device is clamped or not.

Question:

- The springs of the Sieve Shaker abrade the motor belt.

Answer:

- Control whether the hammer of the Sieve Shaker is dislocated or not.

Question:

- The belt of the Sieve Shaker abrades the sub platform of the pulleys.

Answer:

- Apply to the authorized technical service.