Electrodynamic Vibratory Sieve Shaker PE-6700

Data Sheet
Operating Manual

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1. General

1.1. This data sheet combined with the operating manual contains information describing the purpose, principle of operation, design and procedures of operation of PE-6700 electrodynamic vibratory sieve shaker (hereinafter referred to as the shaker).

1.2. Before operation of the thermal unit, read and understand the “Technical Specifications”, “Pre-operation”, “Working Procedure” and “Safety Requirements” sections.

1.3. To avoid mechanical damages and breaking the integrity of electroplating or paint-and-lacquer coating of the sieve, relevant storage and transportation rules must be observed.

1.4. The shaker shall be repaired only at the manufacturer’s premises or by the service department personnel.

2. Purpose

2.1. The shaker shall be used to apply oscillations to the components of the process equipment placed on it (such as SL-EB-120, SL-EB-200 laboratory sieves) and can be used for the size analysis to control and separate loose materials according to their particle sizes.

2.2. In terms of resistance against climatic effects, the shaker meets the version UHL and category 4.2 according to GOST 15150.

3. Technical Specifications

3.1. The shaker is an electronic and mechanical device displaying the time interval remaining until the end of the operation.

3.2. The shaker controls are as follows:

3.2.1. buttons: ◀▶, ▲, ▼, TIMER SETUP, START, STOP.

3.2.2. control knobs: FREQUENCY and AMPLITUDE.

3.3. The button ◀▶ shall be used to select decimal digits, one by one, on TIMER display.

3.4. The buttons ▲ and ▼ shall be used respectively to increase and decrease the selected decimal digit on the TIMER display.

3.5. The TIMER SETUP button shall be used to switch to the operation time setting mode and to save this setting.

3.6. The START button shall be used to run the shaker.

3.7. The STOP button shall be used to stop the shaker operation manually.

3.8. The FREQUENCY control knob shall be used to tune smoothly the shaker worktable oscillation frequency.

3.9. The AMPLITUDE control knob shall be used to tune smoothly the shaker worktable oscillation amplitude.

3.10. Basic technical specifications of the shaker:

3.10.1. Power consumption from the AC mains (max.), VA 100

3.10.2. Permissible total load on a worktable, kg.....3

3.10.3. Worktable oscillation frequency, Hz.....from 12 to 25

3.10.4. Worktable oscillation amplitude, mm .....from 0.25 to 4

3.10.5. Shaker operation time setting range .....from 1 s to 99 min. 59 s

3.10.6. Shaker operation time setting resolution, s 1

3.10.7. Overall dimensions (not including stands), mm .....320 x 385 x 155

3.10.8. Weight (max.), kg.....45

3.10.9. Average service life, years.....6

4. Operation conditions

4.1. Ambient air temperature, °C.....from +15 to +35

4.2. Ambient air relative humidity (at +25°C), % ..... up to 80

4.3. AC power supply voltage, V .....from 187 to 242

4.4. AC frequency, Hz .....from 49 to 51

4.5. Shaker operation mode: periodic, single-shift.

5. Scope of delivery

5.1. PE-6700 electrodynamic vibratory sieve shaker ..... 1 pc.

5.2. Stand .....2 pcs.

5.3. Hold-down bar ..... 1 pc.

5.4. Hold-down nut .....2 pcs.

5.5. Retaining nut .....2 pcs.

5.6. Washer .....2 pcs.

5.7. Data sheet and operating manual..... 1 pc.

6. Design and principle of operation

6.1. See the figure below for the shaker front panel appearance, location of controls and displays.

6.2. In terms of structure, the shaker consists of the worktable, the metal casing with the worktable drive mounted in it, and the electronic shaker control unit.

6.3. The shaker operation principle is to drive reciprocal oscillations in a vertical plane for the worktable platform and the process equipment fastened on it.

6.4. Controls on the front panel of the electronic control unit (Figure 2) are used to select the shaker parameters and operation modes.

Figure 1

6.5. The TIMER display is used to show the time interval, in minutes and seconds, remaining until the end of operation of the shaker.

Figure 2

6.6. Left from the electronic control unit panel, two fuse holders are mounted and the shaker power cable is fastened. The POWER mains switch (Figure 1) is used to activate the shaker.

6.7. Four screw-type supports with retaining nuts are used to adjust the horizontal level of the worktable surface.

7. Pre-operation

7.1. After storage or transportation at temperature below 0°C, the shaker shall be conditioned at room temperature for at least six hours before being connected to the AC mains.

7.2. The procedure for preparation of the shaker for operation shall be as follows.

7.2.1. Remove the shaker from packaging.
7.2.2. Use clean dry cloth or paper to wipe its surface.
7.2.3. Inspect the shaker to ensure that:
- the power cord insulation is undamaged;
- the mains power switch and fuse holders are undamaged.

7.2.4. Place the shaker on a flat solid surface.
7.2.5. Use screw-type supports to adjust the horizontal level of the worktable surface and use retaining nuts to fasten the positions of screw-type supports.
7.2.6. Insert the plug into the mains power socket to connect the shaker to the AC mains.
7.2.7. Switch on the POWER mains switch on the shaker (Figure 1).
7.2.8. Observe how the TIMER display on the shaker front panel is activated.
7.2.9. Press the START button and observe the shaker worktable oscillations.
7.2.10. Press the STOP button to stop the shaker.
7.2.11. Switch off the POWER mains switch on the shaker.

8. Working procedure

8.1. Place and securely fasten the necessary kit of sieves or other process equipment on the shaker worktable.

Note. *Use the delivered stands, bar and nuts to fasten the equipment on the worktable.*

8.2. Switch on the POWER mains switch on the shaker.
8.3. Observe how the digital display is activated.
8.4. Set the shaker operation time according to the procedure as follows.
8.4.1. Press the TIMER SETUP button.

Note. *When the TIMER SETUP button is pressed for the first time, a digit on the TIMER display must begin blinking.*

8.4.2. Use the ◀▶ button to select the TIMER display digit for which the numerical value must be changed.

Note. *The selected display digit must switch from blinking to continuous illumination.*

8.4.3. Use the ▲ and ▼ buttons to set the value for the selected digit of the TIMER display.
8.4.4. Repeat steps 8.4.2 and 8.4.3 for other digits of the TIMER display if necessary.
8.4.5. Press the TIMER SETUP button to save the shaker operation time interval set on the display.

Notes:

1. *When the TIMER SETUP button is pressed for the second time, all display digits are illuminated continuously.*
2. *When mains power is switched off, the saved value of the shaker operation time interval remains valid until the procedure described in Step 8.4 is carried out again.*

8.4.6. Press the START button to activate the shaker operation.

Note. *After pressing the START button, the time interval countdown is started, i.e. the TIMER display shows the time that remains until the shaker stop.*

8.4.7. If necessary, use the AMPLITUDE control knob to tune the worktable vibration amplitude.

Notes:

1. *The worktable oscillation amplitude depends on the weight of equipment placed on the worktable.*
2. *During operation, the shaker can be stopped by pressing the STOP button. Press the START button to resume operation. In such a case, the new countdown is initiated for the shaker operation time interval set in accordance with Step 8.4.*
3. *To set the maximum amplitude of oscillations of the worktable, proceed as follows:*

- *set the AMPLITUDE knob in the position of three fourths of the control scale (Figure 1);*
- *rotate the FREQUENCY control knob until the oscillation amplitude becomes maximum.*

8.4.8. At the end of work, switch off the POWER mains switch on the shaker.

Note. *At the end of countdown, the shaker is stopped, and zeros appear in all decimal places of the TIMER display.*

8.4.9. Remove the process equipment from the shaker worktable platform.

9. Maintenance

9.1. Maintenance shall be carried out by the user to ensure normal operation of the shaker during service.

9.2. The maintenance scope is a shaker visual inspection before operation to check integrity of the casing, mains power cord, mains power plug, mains power switch and fuse holders.

10. Troubleshooting

Problem	Possible cause	Remedy
When the shaker is activated, the TIMER display remains inactive	No power voltage in the socket used to connect the shaker to the mains	Apply mains voltage
	A fuse in the mains power supply system is faulty	Replace a faulty fuse (250 V/1 A)

ATTENTION! To replace the fuse, disconnect the shaker from the electric mains.

11. Safety requirements

11.1. In terms of the degree of protection against electric shock, the shaker meets GOST 12.1.030 and made in accordance with the protection class 1 as per GOST 12.2.007.0.

11.2. A flexible cable with the grounding conductor is applied to connect the shaker to the grounding system using the mains power socket and the plug with grounding contacts.

11.3. For safety purposes, NEVER:

- operate the shaker ungrounded;
- use water or gas supply lines or sewerage networks, hot liquid pipelines, grounding connectors of lightning rods etc. for grounding;
- use adapters for connection to two-pole sockets not provided with the grounding contact.

12. Storage rules

12.1. The shaker shall be stored in the manufacturer's packing box indoors, in rooms meeting the storage group C conditions according to GOST ГОСТ 15150:

- ambient air temperature, °C ..... from -40 to + 50;
- relative air humidity at 25°C, %..... up to 98.

12.2. In case of short-term storage, the shaker may be stored indoors in a room at temperature from +5 to +35°C and relative humidity not exceeding 80% at the ambient air temperature +25°C.

12.3. The atmosphere in a room used to store the shaker must be free of dust, fumes of acids, alkalis and other caustic corrosive substances.

12.4. The shaker must be handled accurately during operation, transportation and storage at a warehouse.

13. Transportation rules

13.1. For the shaker transportation in the original packing box, any modes of transport may be used, including heated pressurized compartments of aircrafts, with the transportation conditions meeting the group Zh, GOST 15150:

- ambient temperature, °C ..... from -40 to +50;
- relative air humidity at 25°C, %..... up to 98;

13.2. The atmosphere in a room used for the shaker transportation must be free of dust, fumes of acids, alkalis and other caustic corrosive substances.

14. Warranty

14.1. The manufacturer guarantees the operability of the device provided that the transportation, storage and operation conditions are met.

14.2. The warranty period is 1 year from the date of sale of the product according to the date specified in the bill of lading. Within this period, the supplier undertakes to repair or replace defective products free of charge.

14.3. The customer's rights in terms of warranty are recognized within the specified period provided that all requirements for transportation, storage and operation of the product are met by the customer.

14.4. In case of revealing any faults of the shaker during the warranty period, the customer should prepare the report with the description of faults and with the user's contact telephones. This report shall be sent to the manufacturer's address:

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E-mail: info@ecohim.ru; URL: www.ecohim.ru

15. Certificate of Acceptance

PE-6700 electrodynamic vibratory sieve shaker, serial No. **6K7P**_____, has been manufactured and accepted in accordance with the current technical documentation and recognized to be suitable for service.

Date of manufacture _____

Stamp of the Technical Control Department

Inspector _____