FRITSCH

Operating instructions

VIBRATORY FEEDER

LABORETTE 24

Valid starting with: 24.00XX/02717

Read the instructions prior to performing any task!

Translation of the original operating instructions

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Certifications and CE conformity

Certification

Fritsch GmbH has been certified by the SGS-TÜV Saar GmbH.

An audit certified that Fritsch GmbH conforms to the requirements of the DIN EN ISO 9001:2015.

CE Conformity

The enclosed Conformity Declaration lists the guidelines the FRITSCH instrument conforms to, to be able to bear the CE mark.

Table of contents

1 Basic structure

The designations below are used with the corresponding numbers in the following operating instructions.

1 Funnel
2 Channel
3 Basic device
4 Control unit
5 Height-adjustable funnel holder

2 Safety information and use

2.1 Requirements for the user

This operating manual is intended for persons assigned with operating and monitoring the Fritsch LABORETTE 24. The operating manual and especially its safety instructions are to be observed by all persons working on or with this device. In addition, the applicable rules and regulations for accident prevention at the installation site are to be observed. Always keep the operating manual at the installation site of the LABORETTE 24.

People with health problems or under the influence of medication, drugs, alcohol or exhaustion must not operate this device.

The LABORETTE 24 may only be operated by authorised persons and serviced or repaired by trained specialists. All commissioning, maintenance and repair work may only be carried out by technically qualified personnel. Qualified personnel are persons who, because of their education, experience and training as well as their knowledge of relevant standards, regulations, accident prevention guidelines and operating conditions, are authorised by those responsible for the safety of the machine to carry out the required work and are able to recognize and avoid possible hazards as defined for skilled workers in IEC 364.

In order to prevent hazards to users, follow the instructions in this manual.

Malfunctions that impair the safety of persons, the LABORETTE 24 or other material property must be rectified immediately. The following information serves both the personal safety of operating personnel as well as the safety of the products described and any devices connected to them: All maintenance and repair work may only be performed by technically qualified personnel.

This operating manual is not a complete technical description. Only the details required for operation and maintaining usability are described.

Fritsch has prepared and reviewed this operating manual with the greatest care. However, no guarantee is made for its completeness or accuracy.

Subject to technical modifications.

2.2 Scope of application

The LABORETTE 24 is used for the continuous or discontinuous feeding of devices, such as mills, sample dividers, sieve shakers, mixers, scales.

It is used wherever fine to coarse-grained, free-flowing solids have to be distributed evenly.

The materials which come into contact with the material flow are made of stainless steel or, in the case of the coated version, of stainless steel with PTFE.

The feed rate can be set to between 1 and 5 dm^3/minute.

2.2.1 Operating principle

A channel made of stainless steel is set in vibration by an electromagnet. A funnel made of stainless steel, which is fastened to a height-adjustable pillar, dips into this channel.

The material to be conveyed is filled into the funnel. When the feeder is switched on, the amount of outflowing material is determined by the distance between the funnel and the channel.

The electrical control system determines the oscillation amplitude of the vibrating channel and hence the amount and flow rate of the material conveyed.

The solid cast housing contains an electrically controlled magnet. Four permanently flexible springs carry the armature of this magnet together with a work plate, which is fastened to it. As a result, the work plate is pulled when the magnet is switched on and can spring back when it is switched off. The cast housing and magnet on the one side and the armature and work plate with feeder on the other side form a vibratory system. Its natural frequency is influenced, for example, by the weight of the material to be conveyed.

The desired feed rate is achieved under all operating conditions; processor-controlled electronics ensure a reproducible oscillation amplitude due to the adjustment of the frequency of the frequency generator to the natural frequency of the channel.

The interface installed in the control system of the feeder allows the feed rate to be stopped by means of an external signal. This, in turn, allows the conveyed quantity to be controlled, for example by applying a DC voltage (within a range of 5-30 V) or with a computer / RS232 serial interface. The "remote control" of the vibratory feeder makes work considerably easier while at the same time ensuring reproducible operations for the process control or routine work in the laboratory.

2.3 Obligations of the operator

Before using the LABORETTE 24, this manual is to be carefully read and understood. The use of the LABORETTE 24 requires technical knowledge; only commercial use is permitted.

The operating personnel must be familiar with the content of the operating manual. For this reason, it is very important that these persons actually receive the present operating manual. Ensure that the operating manual is always near the device.

The LABORETTE 24 may exclusively be used within the scope of applications set down in this manual and within the framework of guidelines put forth in this manual. In case of non-compliance or improper use, the customer assumes full liability for the functional capability of the LABORETTE 24 and for any damage or injury arising from failure to fulfil this obligation.

By using the LABORETTE 24 the customer agrees with this and recognizes that defects, malfunctions or errors cannot be completely excluded. To prevent risk of damage to persons or property or of other direct or indirect damage, resulting from this or other causes, the customer must implement sufficient and comprehensive safety measures for working with the LABORETTE 24.

Neither compliance with this manual nor the conditions and methods used during installation, operation, use and maintenance of the LABORETTE 24 can be monitored by Fritsch GmbH. Improper execution of the installation can result in property damage and thus endanger persons. Therefore, we assume absolutely no responsibility or liability for loss, damage or costs that result from errors at installation, improper operation or improper use or improper maintenance or are in any way connected to these.

The applicable accident prevention guidelines must be complied with.

Generally applicable legal and other obligatory regulations regarding environmental protection must be observed.

2.4 Information on hazards and symbols used in this manual

Safety information

Safety information in this manual is designated by symbols. Safety information is introduced by keywords that express the extent of the hazard.

DANGER

This symbol and keyword combination points out a directly hazardous situation that can result in death or serious injury if not avoided.

WARNING

This symbol and keyword combination points out a possibly hazardous situation that can result in death or serious injury if not avoided.

CAUTION

This symbol and keyword combination points out a possibly hazardous situation that can result in slight or minor injury if not avoided.

NOTICE

This symbol and keyword combination points out a possibly hazardous situation that can result in property damage if not avoided.

ENVIRONMENT

This symbol and keyword combination points out a possibly hazardous situation that can result in environmental damage if not avoided.

Special safety information

To call attention to specific hazards, the following symbols are used in the safety information:

DANGER

This symbol and keyword combination points out a directly hazardous situation due to electrical current. Ignoring information with this designation will result in serious or fatal injury.

DANGER

This symbol and keyword combination designates contents and instructions for proper use of the machine in explosive areas or with explosive substances. Ignoring information with this designation will result in serious or fatal injury.

DANGER

This symbol and keyword combination designates contents and instructions for proper use of the machine with combustible substances. Ignoring information with this designation will result in serious or fatal injury.

WARNING

This symbol and keyword combination points out a directly hazardous situation due to movable parts. Ignoring information with this designation can result in hand injuries.

WARNING

This symbol and keyword combination points out a directly hazardous situation due to hot surfaces. Ignoring information with this designation can result in serious burn injuries due to skin contact with hot surfaces.

Safety information in the procedure instructions

Safety information can refer to specific, individual procedure instructions. Such safety information is embedded in the procedure instructions so that the text can be read without interruption as the procedure is being carried out. The keywords described above are used.

Example:

1. Loosen screw.
2. 

   CAUTION

   Risk of entrapment at the lid.

   Close the lid carefully.
3. Tighten screw.

Tips and recommendations

This symbol emphasises useful tips and recommendations as wells as information for efficient operation without malfunction.

Further designations

To emphasise procedure instructions, results, lists, references and other elements, the following designations are used in this manual:

Designation	Explanation
1., 2., 3. ...	Step-by-step procedure instructions

Designation	Explanation
⇨	Results of steps in the procedure
	References to sections in this manual and relevant documentation
■	Lists without a specific order
[Button]	Operating elements (e.g. push button, switch), display elements (e.g. signal lamps)
'Display'	Screen elements (e.g. buttons, function key assignment)

2.5 Device safety information

Please observe!

- Only use original accessories and original spare parts. Failure to observe this instruction can compromise the safety of the machine.
- Accident-proof conduct is to be strictly followed during all work.
- Comply with all currently applicable national and international accident prevention guidelines.

CAUTION

Wear hearing protection!

If a noise level of 85 dB(A) is reached or exceeded, ear protection should be worn to prevent hearing damage.

WARNING

The maximum accepted concentration (MAC) levels of the relevant safety guidelines must be observed; if necessary, ventilation must be provided or the machine must be operated under an extractor hood.

DANGER

Explosion hazard!

- When Conveying oxidizable substances, e.g. metals or coal, there is a risk of spontaneous combustion (dust explosion) if the share of fine particles exceeds a certain percentage. When Conveying these kinds of substances, special safety measures must be taken and the work must be supervised from a specialist.
- The LABORETTE 24 is not explosion protected and is not designed to convey explosive materials.

- Do not remove the information signs.

NOTICE

Immediately replace damaged or illegible information signs.

- Unauthorised alteration of the LABORETTE 24 will void Fritsch's declaration of conformity to European directives and void the guarantee.
- Only use the LABORETTE 24 when it is in proper working order, as intended and in a safety- and hazard-conscious manner adhering to the operating manual. In particular, immediately rectify any malfunctions that could pose a safety hazard.
- If, after reading the operating manual, there are still questions or problems, please do not hesitate to contact our specialised personnel.

2.6 Hazardous points

DANGER

Danger of entrapment when moving the funnel

DANGER

Do not leave any oxidizing parts on the channel or in the funnel - risk of corrosion.

DANGER

Danger to life due to power surges

Pull the mains plug before cleaning the device.

The device must not be cleaned with running water. Only use a cloth moistened with water.

Electric shocks can cause burns and cardiac arrhythmia or respiratory and cardiac arrests.

2.7 Electrical safety

Disconnect the supply voltage prior to maintenance or cleaning work.

Observe the accident prevention and safety regulations which apply to the specific application cases.

Before the initial start-up it should be checked whether the nominal voltage of the device corresponds to the local mains voltage.

Protective conductor connections must be checked for perfect working order before the initial start-up.

Connections may be established only by authorised personnel.

The LABORETTE 24 is constructed according to the state of the art and in accordance with the EC machinery directive and recognized safety rules. However, the life and limb of the user or third parties may still be endangered or the device or other material assets impaired when using the device.

3 Technical data

3.1 Dimensions

340 x 440 x 140 mm (height x width x depth)

Required space of 340 x 440 mm

No safety distances necessary

3.2 Weight

12 kg (net), 16 kg (gross)

3.3 Voltage

The device can be operated within two different voltage ranges (automatic adjustment):

Single-phase AC voltage of 100-120 V with protective conductor, 50/60 Hz

Single-phase AC voltage of 200-240 V with protective conductor, 50/60 Hz

3.4 Electrical fuses

The control box contains a safety fuse which disconnects the device (single phase) from the mains supply in the event of a malfunction to prevent any consequent damage.

Equivalent: T1.25A micro fuse (5 x 20 mm)

3.5 Power consumption

20 watts

3.6 Vibration frequency

3000 to 4800 vibrations/min. depending on the intensity set.

The vibration frequency rises if a low vibration intensity is set and is at a minimum at natural frequency.

3.7 Sample material / feed rate

Max. feeding size with approx. 10 mm edge length (with U-shaped channel).

Max. feed rate of between 1 and 5 dm^3/minute (test data with U-shaped channel; quartz sand with 25 mm layer height and 100% intensity).

3.8 Operating noise

Noise characteristic values: noise measurement according to DIN 45635-031-01-KL3

The noise characteristic values depend on the vibration intensity set.

Emission at distance of 1 m: from 36 to 42 dB(A)

4 Installation

4.1 Transport

CAUTION

The channel must not be used for lifting.

Reach under the edge of the housing to carry the device.

4.2 Unpacking

The Vibratory feeder is packed either in a cardboard or wooden box.

- Carefully open the cardboard box with a knife (do not cut too deep, since otherwise the contents could become damaged) and remove the packaging material.
- It is best to open the wooden box by pulling out the metal clips with pliers.
- Carefully lift out the Vibratory feeder.
- Check the Vibratory feeder for possible damage in transit.
- Compare the contents of the delivery with your order.

4.3 Setting up

NOTICE

Allow the device to acclimatise for two hours before commissioning. High temperature differences can lead to condensation in the device and damage to the electronics after switching on.

Strong temperature fluctuations can occur during transport or interim storage. Depending on the temperature difference between the installation site and the transport or storage environment, condensation can form inside the device. This can damage the electronics if the devices are switched on too early. Wait for at least two hours after setup before switching on the device.

The Vibratory feeder must be placed in a horizontal position on a level surface or stable stand.

Its rubber feet provide stability (it is not necessary to attach it to your work place), however it should be easy to access and there should be sufficient space.

The control housing can be set up or hung up. Holes are provided on the inside of its underside for the wall mounting option.

NOTICE

The surface must be stable and not resonate.

4.4 Ambient conditions

WARNING

The LABORETTE 24 must not be used:

- In humid and wet areas.
- At temperatures below 10°C or above 50°C.
- In areas with highly inflammable substances.
- In areas with explosive substances.
- In very dirty or dusty environments.
- In environments which contain conductive dust.
- In aggressive environments (e.g. salty atmospheres).
- In rooms with a level of dirt higher than 2 according to IEC 664.
- In rooms with more than 80% relative humidity for temperatures up to 31°C, decreasing linearly down to 50% relative humidity at 40°C.
- In outdoor areas.

The Vibratory feeder may be exposed to high temperature fluctuations during transport (e.g. by plane). The resulting condensation water can damage electronic components. Do not switch on the feeder directly after unpacking it. Keep the feeder in the laboratory for a while until any existing condensation water has evaporated.

4.5 Electrical connection

WARNING

Electrical connection

External fuse protection is to be provided for the connection of the mains cable to the mains according to the regulations at the installation site.

Take the details on the required voltage and frequency of the device from the name plate.

Make sure the values correspond to the existing mains supply.

Connect the device to the main supply with the supplied connection cable.

4.5.1 Mains connection

The control box contains a mains connection socket with mains switch, a device connection cable with plug and a T1.25A device fuse (5x20).

Set the mains switch to 0.

Connect the mains cable to the mains connection socket and then to the mains supply.

4.5.2 Control box / feeder connection

The device connection cable for the feeder is firmly attached to the control box. Connect the device connection cable to the appropriate socket of the vibratory feeder and lock the plug.

4.5.3 External interface connection

Remove the protective cap from the interface connection on the side.

There are two ways of connecting the 9-pin sub-D socket.

Either use the supplied control cable to simply switch the channel vibration on and off e.g. with the PULVERISETTE 14 variable speed rotor mill.

Or use a standard RS232 cable for the connection to the PC. Software and interface protocols are available upon request.

4.6 Initial start-up

Check all plug connections again.

Switch on the control box by the mains switch.

Press the START key and set the feed rate with the +/- keys.

5 Using the device

Working principle

The control system of the LABORETTE 24 is based on the frequency control of the vibration system. An electromagnet pulls a spring-mounted brace and releases it again. The material is conveyed on the channel in the preferred direction due to the spring and inertia forces. It performs throwing movements on the channel in the process.

In the event of adhesive materials, the samples may jam in the channel or compactions may occur. The conveyance of very light material may be impaired. This is due to the operating principle.

Vibration nodes and loops are formed, since the channel resonates over its entire length with the vibration system. As a result, inhomogeneous materials may be de-mixed on the channel. This is also due to the operating principle.

The control system is pre-set to the mechanical natural frequency (resonance frequency) of the system. The control frequency corresponds to the natural frequency of the vibration system if intensity=100% is displayed. The vibration intensity and hence the feed rate are controlled directly by pressing the +/- keys to adjust the control frequency.

In the upper critical working range, the phase position between the excitation and resonator tends towards 180°. This working range compensates damping changes and at the same time maintains the harmonious vibratory motion of the mechanical vibrator, which is why this setting, for example, is suitable for difficult plastic samples. The conveying speed is stable for lightweight to medium-weight samples.

5.1 Operation

5.1.1 Switching on / off

Actuate the main switch on the rear of the device.

The parameters set last are displayed.

5.1.2 Feed rate

You can switch between the feed rate and timer function settings with the Intensity/Time key. Press the Intensity/Time key repeatedly until the light bar indicates the word Intensity.

The picture shows the current mode for setting the feed rate. The setting is made within a range of 5..100% with the +/- keys (figure: 40%).

The Intensity display is used only as a setting aid and depends on external influences. External influences are, for example, the mains voltage, heating of the electromagnet in continuous operation or the sample weight.

5.1.3 Timer function

You can switch between the feed rate and timer function settings with the Intensity/Time key. Press the Intensity/Time key until the light bar indicates the word Time.

The picture shows the timer mode. The setting is made within a range of 1 to 999 with the +/- keys. For continuous operation, press the minus key until P is displayed (P = continuous operation).

The remaining time is displayed in minutes if the device is not operated in continuous mode. As soon as the timer expires, the time originally set is displayed.

5.1.4 Start / Interrupt / Stop / Reset

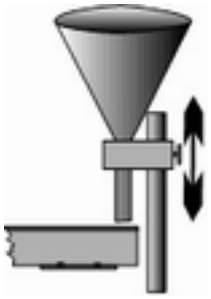
Conveyance is started with the Start key.

Conveyance is stopped with the Stop key.

→You can resume the conveying process after the expired time by pressing the Start key.

→ As soon you edit a parameter, the conveying process is restarted by pressing the Start key.

5.1.5 Setting the layer height



The funnel can be positioned correctly by turning the funnel holder and adjusting its height.

Undo the locking screw on the funnel holder. Set the desired layer height between the bottom edge of the funnel and the base of the channel. Move the funnel holder upwards or downwards for this purpose.

The funnel must not touch the base or inner side wall!

Tighten the locking screw of the funnel holder.

Depending on the flowing properties and size of the material, a smaller gap (for fine powder with good flowing properties) or a larger gap (for coarse material) between the funnel and the feeder is needed. The gap to the feeder should be about three times the maximum diameter of the material.

5.2 Conveying material

1. Align the vibratory feeder so that the end of the channel is above the filling opening for the material flow.
2. Set the distance between the funnel and channel. Do not set a gap which is too large in the case of dusty material (approx. 3 mm): risk of dust escaping and/or overflow.
3. Set the vibration intensity to a minimum, so that the feed rate is minimal.
4. Fill the funnel with material.
5. Press the Start key.
6. Press the PLUS key repeatedly and increase the vibration intensity slowly up to the desired feed rate.

5.2.1 U-channel (standard)

The standard channel has a level outlet with a width of 40 mm.

Ideal results are achieved with this channel - in particular for large feed quantities.

The standard channel is screwed onto the armature with four screws and can be replaced easily with the V channel.

5.2.2 V-channel

When using the V-shaped channel, when inserting the funnel, make sure that the pointed side of the funnel outlet is directed backwards.

The V channel has a V-shaped cross section.

The V channel can be used to create a narrow material flow, which, for example, has to be fed specifically into a narrow opening.

Ideal results are achieved with this channel in particular for small and very small amounts.

The V channel is screwed onto the armature with four screws and can be replaced easily with the standard channel.

The tip of the corresponding funnel is shaped accordingly.

5.3 Set-up mode

Activate setup mode:

1. Switch off the vibratory feeder.
2. Wait a few seconds.
3. Press and hold down the STOP button.
4. Switch the feeder on at the main switch at the back.
5. Release the STOP button after a few seconds. You are now in setup mode.

5.3.1 Setting the frequency range

The control system has been pre-set at the factory to the mechanical natural frequency (resonance frequency) of the system (intensity=100%). If the feed rates which can be adjusted within this frequency range are too high for you, you can readjust the control frequency range.

The control frequency in higher frequency ranges is moved away from the resonance frequency by pressing the MINUS key – the feed rate drops, and the feeding range becomes finer as a result. The settings are saved by pressing the STOP button.

Standard values in the factory settings are close to the natural frequency and are as follows:

- 230 V → 130 (= 100 %)
- 110 V → 70 (= 100 %)

If you now wish to re-assign the resonance frequency of the system (natural frequency) to the intensity = 100 %, proceed as follows:

1. Activate setup mode.
2. Load the channel only with one test part.
3. Use the Plus and Minus keys to go through the control frequencies.
4. The test part has the highest speed at the resonance frequency (standard values).
5. Press the Stop button to save.

Two or more resonance points are possible.

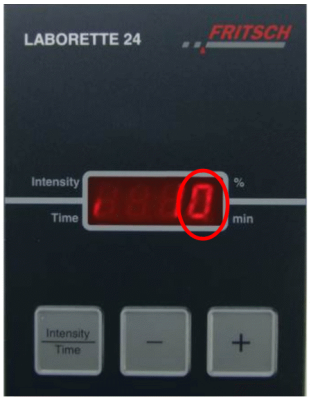
The main resonance point is that at the highest part speed.

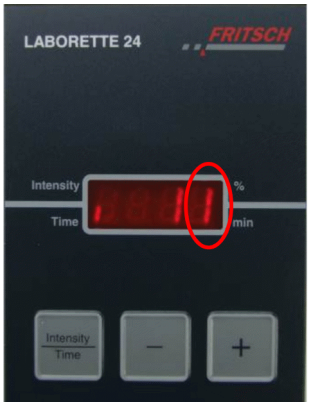
5.3.2 Restarting after power returns

The LABORETTE 24 is set at the factory so that it does not automatically continue running after switching off or loss of power. However this can be deactivated in setup mode. The vibratory feeder then restarts automatically after the main switch is pressed and power returns.

To do this, proceed as follows:

1. Activate setup mode.
2. Press the "Intensity / Time" key to access the second sub-menu. The "Time" menu item is indicated by a vertical bar on the display.
3. The setting "0" shows that restart is deactivated.





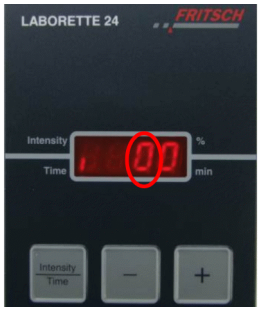
4. Press the Plus key to activate the automatic restart.
   ➡ "1" is displayed in the display.
5. Press the Plus key again to deactivate the automatic restart.
   ➡ The factory setting is restored and "0" appears in the display.
6. Press the Stop key to save the changes and return the device to operating mode.

5.3.3 Setting the time display

The timer can be set in minutes or seconds.

For this, proceed as follows:

1. Activate setup mode.
2. Press the "Intensity / Time" key to access the second sub-menu. The "Time" menu item is indicated by a vertical bar on the display.
3. The setting "0" indicates that the time runs in minutes.



4. Pressing the minus – button changes the setting to seconds.
   ➡ "1" appears in the display.
5. Pressing the minus – button again re-activates the time setting to minutes.
   ➡ The factory setting is restored and "0" appears in the display.
6. Press the Stop key to save the changes and return the device to operating mode.

6 Cleaning

⚠ DANGER

Mains voltage!

- Before beginning with cleaning work, disconnect the mains plug and protect the device against being unintentionally switched back on!
- Do not allow any liquids to flow into the device.
- Indicate cleaning work with warning signs.
- Put safety equipment back into operation after cleaning work.

It is recommended to remove the funnel for cleaning.

The funnel and channel can be rubbed with a dry or wet cloth to cleaning them thoroughly.

Components can be damaged by fluid entering the housing interior.

It is not permitted to use solvents. Solvents can damage plastic parts and the coating.

The individual components can also be cleaned with water or solvent after taking the funnel out of its holder and unscrewing the channel from the armature. Then screw the channel back on again and replace the funnel.

7 Maintenance

Apart from cleaning, the LABORETTE 24 vibratory feeder is maintenance free.

⚠ DANGER

Mains voltage

- Before beginning with maintenance work, unplug the mains plug and protect the device against being unintentionally switched back on again!
- Indicate maintenance work with warning signs.
- Maintenance work may only be performed by specialised personnel.
- Put safety equipment back into operation after maintenance or repair work

The most important element of maintenance is regular cleaning!

We recommend keeping a safety logbook ➦ Chapter 12 'Safety logbook' on page 35, where all work (maintenance, repairs.....) performed on the device is entered.

7.1 Replacement of the device fuse

The LABORETTE 24 is protected by a T1.25A/250V glass fuse.

Pull the mains plug out of the socket.

⚠ DANGER

Danger to life due to power surges

Exposed power contacts

You could touch the fuses or fuse holder with live contacts when changing the fuses. Electric shocks can cause burns and cardiac arrhythmia or respiratory and cardiac arrests.

Remove the mains cable before changing the fuses.

Maintenance

Remove the mains cable from the control unit.

Unscrew the fuse insert.

Change the fuse.

Screw the insert with the inserted fuse back in again.

Re-establish the mains connection.

8 Repairs

DANGER

Mains voltage!

- Before beginning with repair work, unplug the mains plug and protect the device against being unintentionally switched back on.
- Indicate repair work with warning signs.
- Repair work may only be performed by specialised personnel.
- Put safety equipment back into operation after maintenance work.

8.1 Checklist for troubleshooting

Fault description	Cause	Remedy
Indicators do not light up.	No connection to mains	Plug in mains plug.
	Main switch off	Switch on main switch.
	Device fuses blown	■ Check device fuse. ■ Fuse insert on rear of device T 1.25 A
START key pressed, but LABORETTE 24 does not start	Device connection cable not connected to feeder	Connect device connection cable.
Material to be ground runs over the edge of the channel.	Depends on the sample	Reduce the amplitude / feed gap and / or height of the funnel.
Material to be ground is compacted on the channel.	Depends on material properties	Change the frequency range of the amplitude to allow the sample material to flow again.

9 Disposal

It is hereby confirmed that FRITSCH has implemented the directive 2002/95/EC of the European Parliament and Council from 27th January 2003 for the limitation of the use of certain dangerous substances in electrical and electronic devices.

FRITSCH has registered the following categories according to the German electrical and electronic equipment act, section 6, paragraph 1, clause 1 and section 17, paragraphs 1 and 2:

Mills and devices for the preparation of samples have been registered under category 6 for electrical and electronic tools (except for large stationary industrial tools).

Analytical devices have been registered under category 9, monitoring and control instruments.

It has been accepted that FRITSCH is operating only in the business-to-business area. The German registration number for FRITSCH is WEEE reg. no. DE 60198769

FRITSCH WEEE coverage

Since the registration of FRITSCH is classified for bilateral transactions, no legal recycling or disposal process is described. FRITSCH is not obliged to take back used FRITSCH devices.

FRITSCH declares it is prepared to take back used FRITSCH devices for recycling or disposal free of charge whenever a new device is purchased. The used FRITSCH device must be delivered free of charge to a FRITSCH establishment.

In all other cases FRITSCH takes back used FRITSCH devices for recycling or disposal only against payment.

10 Guarantee terms

Guarantee period

As manufacturer, FRITSCH GmbH provides – above and beyond any guarantee claims against the seller – a guaranty valid for the duration of two years from the date of issue of the guarantee certificate supplied with the device.

Within this guarantee period, we shall remedy all deficiencies due to material or manufacturing defects free of charge. Rectification may take the form of either repair or replacement of the device, at our sole discretion. The guarantee may be redeemed in all countries in which this FRITSCH device is sold with our authorisation.

Conditions for claims against the guarantee

This guarantee is subject to the condition that the device is operated according to the instructions for use / operating manual and its intended use.

Claims against the guarantee must include presentation of the original receipt, stating the date of purchase and name of the dealer, together with the complete device type and serial number.

For this guarantee to take effect, the answer card entitled "Securing of Guarantee" (enclosed with the device) must be properly filled out and despatched without delay after receipt of the device and be received by us within three weeks or alternatively, ➥ *online registration* must be carried out with the above-mentioned information.

Reasons for loss of the guarantee

The guarantee will not be granted in cases where:

- Damage has arisen due to normal wear and tear, especially for wear parts, such as: Crushing jaws, support walls, grinding bowls, grinding balls, sieve plates, brush strips, grinding sets, grinding disks, rotors, sieve rings, pin inserts, conversion kits, sieve inserts, bottom sieves, grinding inserts, cutting tools, sieve cassettes, sieve and measuring cell glasses.
- Repairs, adaptations or modifications were made to the device by unauthorized persons or companies.
- The device was not used in a laboratory environment and/or has been used in continuous operation.
- Damage is present due to external factors (lightning, water, fire or similar) or improper handling.
- Damage is present that only insubstantially affects the value or proper functioning of the device.
- The device type or serial number on the device has been changed, deleted, removed or in any other way rendered illegible
- The above-mentioned documents have been changed in any way or rendered illegible.

Costs not covered by the guarantee

This guarantee excludes any costs for transport, packaging or travel that accrue in the event the product must be sent to us or in the event that one of our specialist technicians is required to come to your site. Any servicing done by persons not authorised by us and any use of parts that are not original FRITSCH accessories and spare parts will void the guarantee.

Further information about the guarantee

The guarantee period will neither extend nor will a new period of guarantee begin in the event that a claim is placed against the guarantee.

Guarantee terms

Please provide a detailed description of the type of error or the complaint. If no error description is enclosed, we shall interpret the shipment as an assignment to remedy all recognisable errors or faults, including those not covered by the guarantee. Errors or faults not covered by the guarantee shall in this case be rectified at cost.

We recommend reading the operating manual before contacting us or your dealer, in order to avoid unnecessary inconvenience.

Ownership of defective parts is transferred to us with the delivery of the replacement part; the defective part shall be returned to us at buyer's expense.

NOTICE

Please note that in the event that the device must be returned, the device must be shipped in the original Fritsch packaging. Fritsch GmbH denies all liability for any damage due to improper packaging (packaging not from Fritsch).

Any enquiries must include a reference to the serial number imprinted on the type plate.

11 Exclusion of liability

Before using the product, be sure to have read and understood this operating manual.

The use of the product requires technical knowledge; only commercial use is permitted.

The product may be used exclusively within the scope of applications set down in this operating manual and within the framework of guidelines put forth in this operating manual and must be subject to regular maintenance. In case of non-compliance, improper use or improper maintenance, the customer assumes full liability for the functional capability of the product and for damage or injury arising from violating these obligations.

The contents of this operating manual are subject in entirety to copyright law. This operating manual and its contents may not be copied, further distributed or stored in any form, in part or in whole, without the prior written consent of Fritsch.

This operating manual has been prepared to the best of our knowledge and checked for accuracy at the time of printing. FRITSCH GMBH assumes no guarantee or liability whatsoever for the accuracy or completeness of the contents of this operating manual, including but not limited to the implied warranties of merchantability and fitness for a particular purpose, unless liability is expressly prescribed by applicable laws or jurisprudence.

FRITSCH GMBH expressly reserves the right to modify and/or update this operating manual without prior notice. The same applies to modifications and improvements to the products described in this operating manual. It is the responsibility of the user to ensure that they have the current version of this operating manual. For more information, please contact your local FRITSCH GMBH distributor or Fritsch GmbH, Industriestr. 8, D-55473 Idar-Oberstein.

Not all parts shown here are necessarily installed in the product. The buyer is not entitled to delivery of these parts. If interested, please contact your local FRITSCH GMBH distributor or Fritsch GmbH, Industriestr. 8, D-55743 Idar-Oberstein.

FRITSCH GMBH takes the greatest care to ensure that the quality, reliability and safety of your products are continuously improved and adapted to the state of the art. The supplied products as well as this operating manual conform to the current state of the art when they leave the sphere of influence of FRITSCH GMBH.

By using the product the customer agrees with this and recognizes that defects, malfunctions or errors cannot be completely excluded. To prevent risk of damage to persons or property or of other direct or indirect damage, resulting from this or other causes, the customer must implement sufficient and comprehensive safety measures for working with the product.

Fritsch GmbH excludes any liability, warranty, or other obligation to compensate for damages, regardless of whether this liability, warranty, or other obligation is explicit or implicit, contractual or arising from unlawful acts or prescribed contractually, by law, or otherwise. In no event shall the buyer be entitled to any compensation from Fritsch GmbH for any special, direct, indirect, coincidental or consequential damage, including but not limited to lost profits, lost savings, lost sales or financial loss of any kind or for compensation of third parties, for downtimes, for lost goodwill, for damage to or replacement of equipment and property, for costs or restoration of materials or goods related to the product or the use of our products, for other damage or injury to persons (including fatal

injuries) or similar. The above exclusion of liability is limited by mandatory liability as prescribed by laws or jurisprudence. Liability for negligence is excluded in all cases.

No permission is given expressly, implicitly or otherwise for the use of patents, brands or other copyrights. We also assume no liability for copyright infringements or infringements of the rights of third parties arising from the use of this product.

Neither compliance with this operating manual nor the conditions and methods used during installation, operation, use and maintenance of the product can be monitored by Fritsch GmbH. Improper execution of the installation can result in property damage and thus endanger persons. Therefore, we assume absolutely no responsibility or liability for loss, damage or costs that result from errors at installation, improper operation or improper use or improper maintenance or are in any way connected to these.

12 Safety logbook

Date	Maintenance / Repair	Name	Signature

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