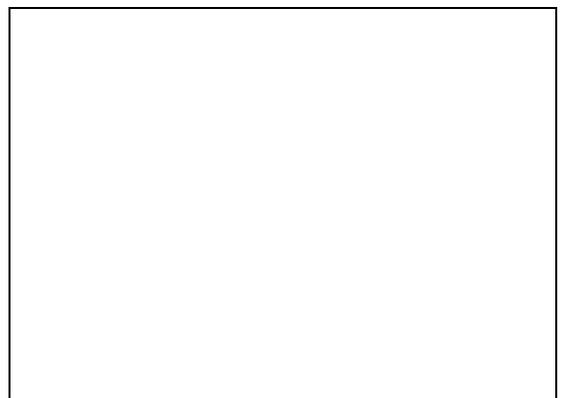


Manual

Vibratory Disc Mill RS 200



Translation

Retsch[®]

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1 Notes on the manual

This operating manual is a technical guide on how to operate the device safely and it contains all the information required for the areas specified in the table of contents. This technical documentation is a reference and instruction manual. The individual chapters are complete in themselves.

Familiarity (of the respective target groups defined according to area) with the relevant chapters is a precondition for the safe and appropriate use of the device.

This operating manual does not contain any repair instructions. If faults arise or repairs are necessary, please contact your supplier or get in touch with Retsch GmbH directly.

Application technology information relating to samples to be processed is not included but can be read on the Internet on the respective device's page at www.retsch.com.

Changes

Subject to technical changes.

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Infringements will result in damage compensation liability.

1.1 Explanations of the Safety Instructions

The following **warnings** in this manual warn of possible risks and damage:



WARNING

W1.0000

Type of danger / personal injury

Source of danger

- Possible consequences if the dangers are not observed.
- **Instructions and information on how the dangers are to be avoided.**

Serious personal injuries may result from disrespecting the warning notice. There exists an elevated risk of an accident or severe injury to personnel. Additionally, in continuous text or action instructions the signal word **WARNING** is used.



CAUTION

C1.0000

Type of danger / personal injury

Source of danger

- Possible consequences if the dangers are not observed.
- **Instructions and information on how the dangers are to be avoided.**

Moderate or mild personal injuries may result from disrespecting the safety instruction for caution. There exists a medium or low risk of an accident or injury to personnel. Additionally, in continuous text or action instructions the signal word **CAUTION** is used.

NOTICE

N1.0000

Type of property damage

Source of property damage

- Possible consequences if the notices are not observed.
- **Instructions and information on how the property damages are to be avoided.**

Property damages may result from disrespecting the notice. However, there exists no risk of an injury to personnel. Additionally, in continuous text or action instructions the signal word *NOTICE* is used.

1.2 General Safety Instructions



CAUTION

Read the Operating Manual

Non-observance of these operating instructions

- The non-observance of these operating instructions can result in personal injuries.
- **Read the operating manual before using the device.**
- **We use the adjacent symbol to draw attention to the necessity of knowing the contents of this operating manual.**



Target group : All persons concerned with the machine in any form

This machine is a modern, high performance product from Retsch GmbH and complies with the state of the art. Operational safety is given if the machine is handled for the intended purpose and attention is given to this technical documentation.

You, as the owner/managing operator of the machine, must ensure that the people entrusted with working on the machine:

- have noted and understood all the regulations regarding safety,
- are familiar before starting work with all the operating instructions and specifications for the target group relevant for them,
- have easy access always to the technical documentation for this machine,
- and that new personnel before starting work on the machine are familiarised with the safe handling of the machine and its use for its intended purpose, either by verbal instructions from a competent person and/or by means of this technical documentation.

Improper operation can result in personal injuries and material damage. You are responsible for your own safety and that of your employees.

Make sure that no unauthorised person has access to the machine.



CAUTION

Changes to the machine

- Changes to the machine may lead to personal injury.
- **Do not make any change to the machine and use spare parts and accessories that have been approved by Retsch exclusively.**

NOTICE**Changes to the machine**

- The conformity declared by Retsch with the European Directives will lose its validity.
 - You lose all warranty claims.
 - **Do not make any change to the machine and use spare parts and accessories that have been approved by Retsch exclusively.**
-

1.3 Repairs

This operating manual does not contain any repair instructions. For your own safety, repairs may only be carried out by Retsch GmbH or an authorized representative or by Retsch service engineers.

In that case please inform:

The Retsch representative in your country
Your supplier
Retsch GmbH directly

Your Service Address:

1.4 Confirmation Form for the Managing Operator

This operating manual contains essential instructions for operating and maintaining the device which must be strictly observed. It is essential that they be read by the operator and by the qualified staff responsible for the device before the device is commissioned. This operating manual must be available and accessible at the place of use at all times.

The user of the device herewith confirms to the managing operator (owner) that (s)he has received sufficient instructions about the operation and maintenance of the system. The user has received the operating manual, has read and taken note of its contents and consequently has all the information required for safe operation and is sufficiently familiar with the device.

As the owner/managing operator you should for your own protection have your employees confirm that they have received the instructions about the operation of the machine.

I have read and taken note of the contents of all chapters in this operating manual as well as all safety instructions and warnings.

User

Surname, first name (block letters)

Position in the company

Signature

Service technician or operator

Surname, first name (block letters)

Position in the company

Place, date and signature

2 Packaging, Transport and Installation

2.1 Packaging

The packaging has been adapted to the mode of transport. It complies with the generally applicable packaging guidelines.

NOTICE

Storage of packaging

- In the event of a complaint or return, your warranty claims may be endangered if the packaging is inadequate or the machine has not been secured correctly.
 - **Please keep the packaging for the duration of the warranty period.**
-

2.2 Transport

NOTICE

Transport

- Mechanical or electronic components may be damaged.
 - **The machine may not be knocked, shaken or thrown during transport.**
-

NOTICE

H0014

Complaints

- The forwarding agent and Retsch GmbH must be notified immediately in the event of transport damage. It is otherwise possible that subsequent complaints will not be recognised.
 - **Notify your forwarding agent and Retsch GmbH within 24h**
-

2.3 Temperature fluctuations and condensed water

NOTICE

Temperature fluctuations

The machine may be subject to strong temperature fluctuations during transport (e.g. aircraft transport)

- The resultant condensed water may damage electronic components.
 - **Protect the machine from condensed water.**
-

Temporary storage:

Also, in case of an interim storage the device must be stored dry and within the specified ambient temperature range.

2.4 Conditions for the Installation Site

Ambient temperature: 5°C to 40°C

NOTICE

Ambient temperature

- Electronic and mechanical components may be damaged and the performance data alter to an unknown extent.
- **Do not exceed or fall below the permitted temperature range of the machine (5°C to 40°C / ambient temperature).**

2.5 Installation of the Device

Installation height: maximum 2000 m above sea level

2.6 Type Plate Description

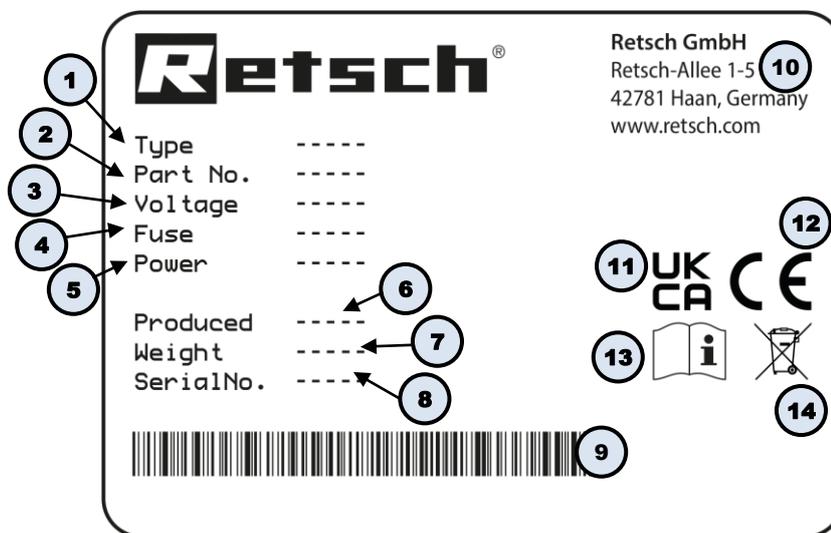


Fig. 1: Type plate

- 1 Device designation
- 2 Part number
- 3 Power version, Mains frequency
- 4 Fuse type and fuse strength
- 5 Capacity, Amperage
- 6 Year of production
- 7 Weight
- 8 Serial number
- 9 Bar code
- 10 Manufacturer's address
- 11 UKCA marking
- 12 CE marking
- 13 Safety warning: Read the manual
- 14 Disposal label

① In the case of queries please provide the device designation (1) or part number (2), as well as the serial number (8) of the device.

2.7 Electrical Connection

⚠ WARNING

When connecting the power cable to the mains supply, use an external fuse that complies with the regulations applicable to the place of installation .

- Please check the type plate for details on the necessary voltage and frequency for the device.
- Make sure the levels agree with the existing mains power supply.
- Use the supplied connection cable to connect the device to the mains power supply.
- Make sure that the voltage and frequency of your mains connection corresponds to that on the type plate.
- The mains connection must be fused to at least 16A.
- An electrical connection without protective earth PE is not permitted.

The drive of the device is equipped with a frequency converter. In order to satisfy the EMC Directive, this is fitted with a mains filter and shielded cables to the motor. If your mains connection includes a residual current protection device, the suppressor capacitor wiring of the frequency converter when this is switched on (it is switched on by closing the grinding chamber hood) can lead to accidental triggering of the residual current protection device without any error being present on the device or in the mains installation.

In accordance with the state of the art, selective all current sensitive residual current protection devices are recommended for such cases. The tripping current must be sufficiently dimensioned because capacitive compensating current (shielded cable, mains filter) which only occurs for a short time can easily lead to accidental triggering.

In certain circumstances, it may be necessary to operate the device without a residual current protection device. It is then necessary, however, to check that this does not contravene the local regulations of the electricity company or other institutions and the applicable standards.

2.8 Creating interface connection

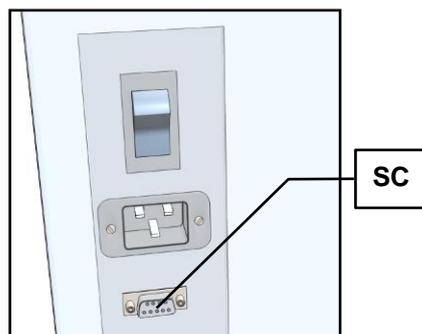


Fig. 2: Serial interface

- Inactive interface (**SC**) for optional data communication with an external device. This requires updating of the software.

NOTICE

The interface cable must not be longer than 2.5m. Longer cables can lead to faults in data transmission.

2.9 Transport

WARNING

Serious personal injury

Falling loads

- The appliance is very heavy and can therefore cause serious personal injuries if it falls down.
- **Lifting above head height is not permissible!**

NOTICE

N2.0018

Transportation lock

Transport without transportation lock, or operation with transportation lock

- Mechanical components may be damaged.
- **Only transport the device with mounted transportation lock.**
- **Do not operate the device with built-in transportation lock.**

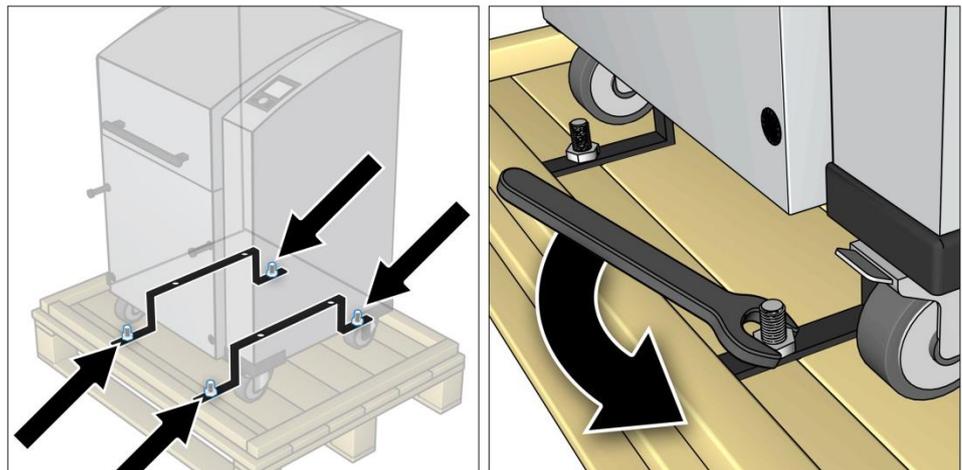


Fig. 3: Unscrewing the transport lock from the transport pallet

The device is secured to the transport pallet by the transport lock and four nuts.

- Use a 13mm spanner to unscrew the four nuts.

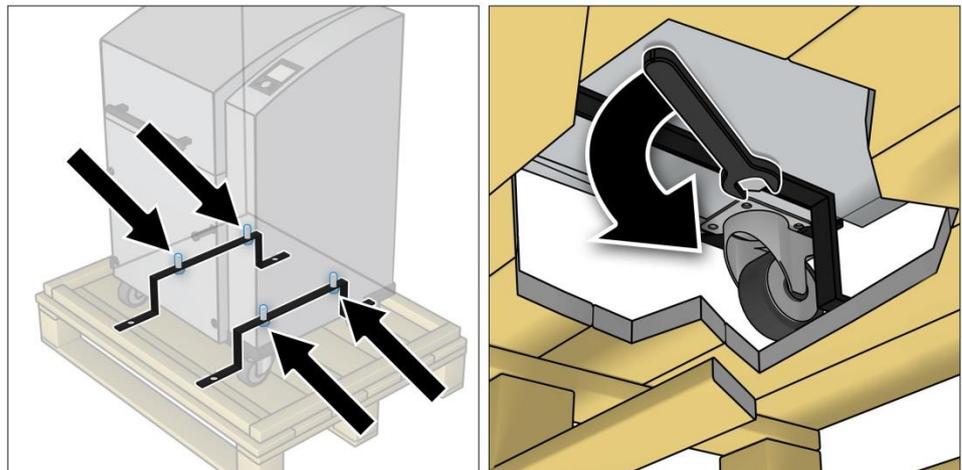


Fig. 4: Removing the transport lock from the device

Four bolts secure the transport lock underneath the device.

- Use a 13mm spanner to unscrew the four bolts.

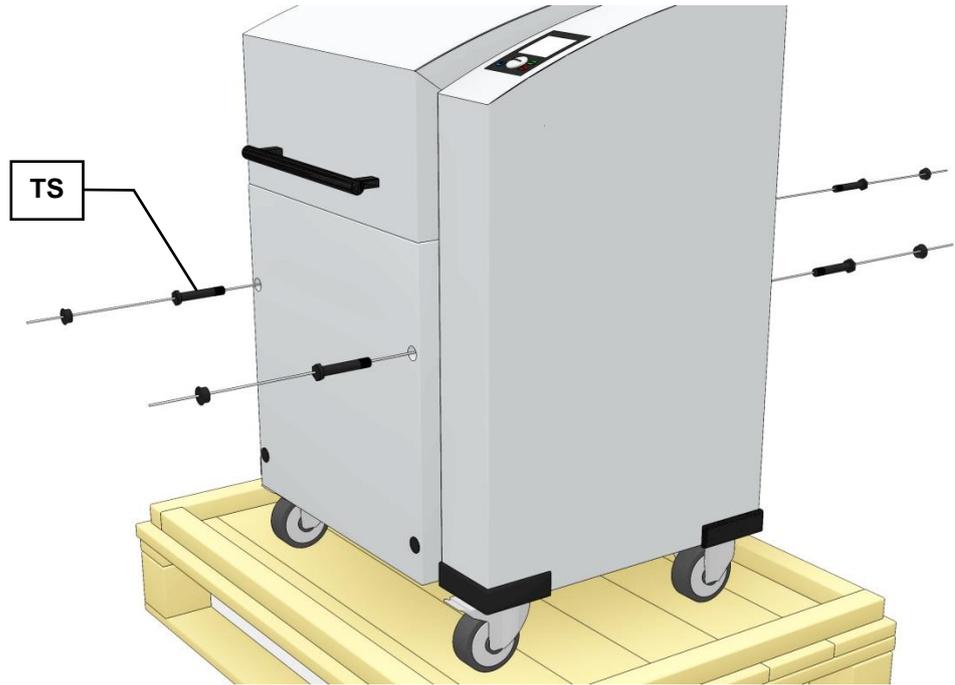


Fig. 5: Mounting the transport screws

The device should only be lifted and transported using the 4 transport screws (TS) provided.
Net weight approx. 210 kg

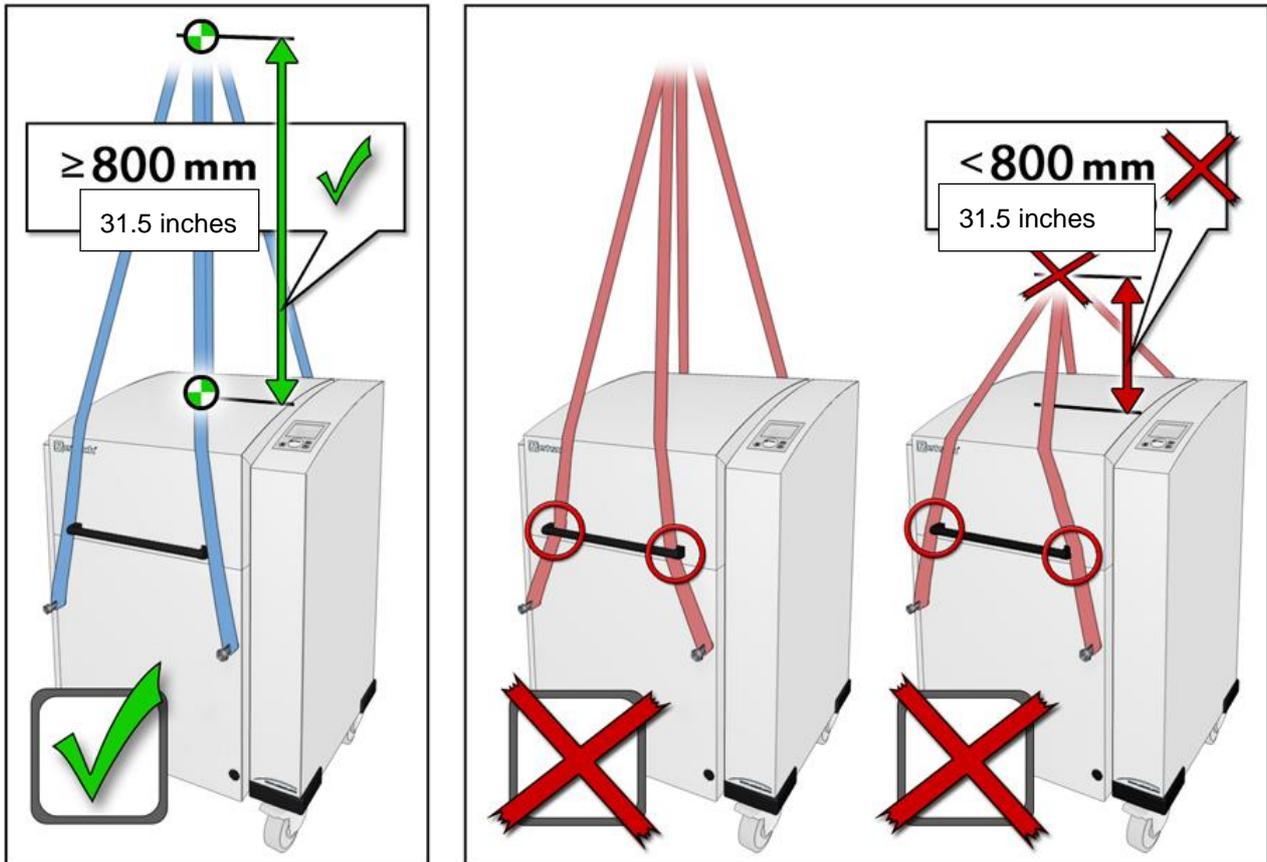


Fig. 6: Attaching the hoist

NOTICE

Transport

- Mechanical or electronic components may be damaged.
- **The machine may not be knocked, shaken or thrown during transport.**

2.10 Installation of the Device

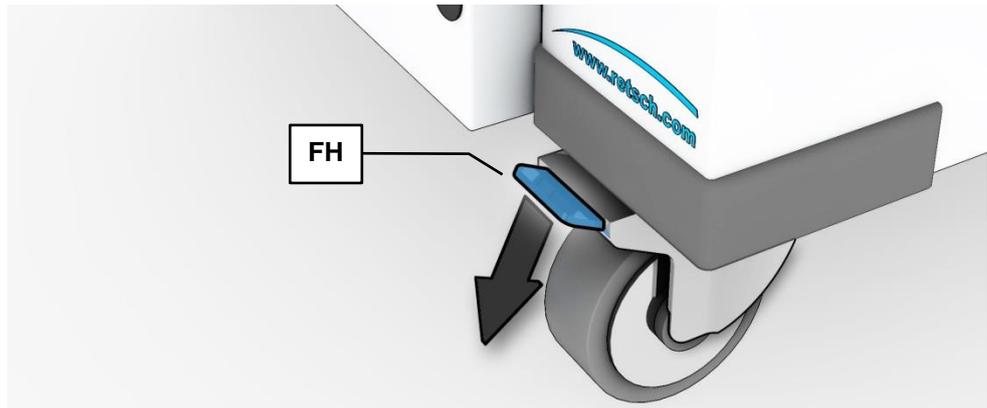


Fig. 7: Locking the transport rollers

- Place the device on a firm surface.
Please refer to the “Technical Data” chapter for further parameters.
The device must be locked before it is put into operation.
- Press the locking lever (FH) of the two front rollers.

2.11 Removing the Transportation Lock

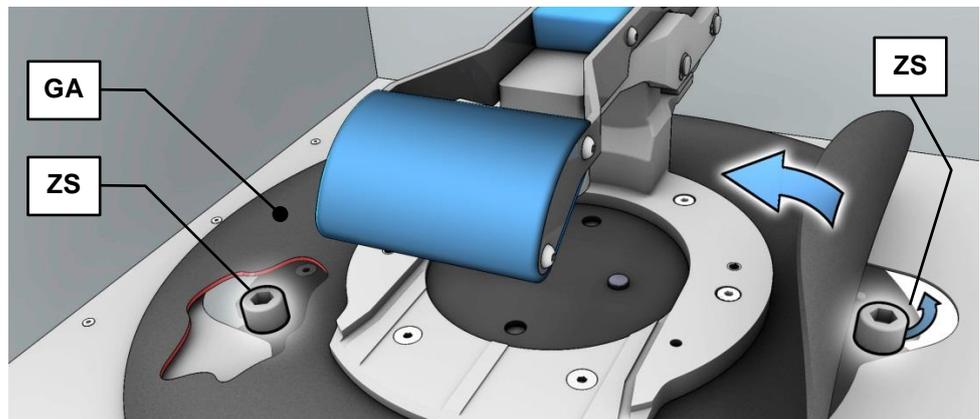


Fig. 8: Transport lock access

- The drive unit of the device is locked during transport.
Before putting into operation for the first time, the two cylinder screws (ZS) fitted under the rubber cover (GA) must be removed.
- Lift up the rubber cover (GA).

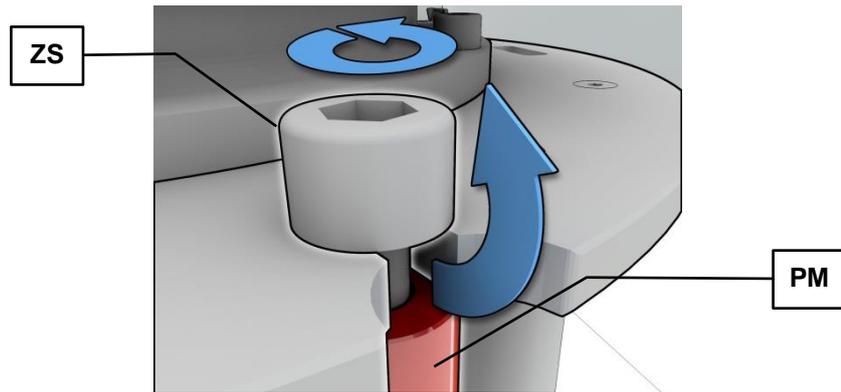


Fig. 9: Releasing the transport lock

- Unscrew the two cylinder screws (**ZS**).
- Pull the cylinder screws (**ZS**) together with the sleeve (**PM**) out sideways.

NOTICE

Keep the cylinder screws for any future transport.

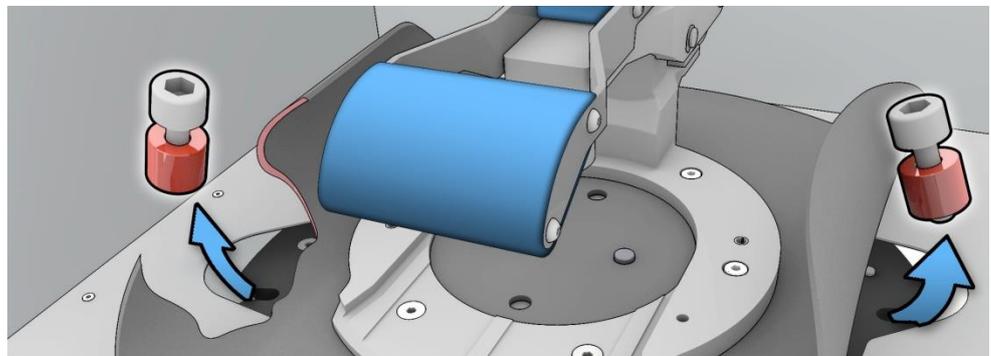


Fig. 10: Removing the transport lock

3 Technical Data

3.1 Use of the Device for the Intended Purpose



1.V0004

Risk of explosion or fire

Changing sample properties

- Consider that the properties and therefore also the hazardousness of your sample can change during the grinding process.
- **Do not use any substances in this device which carry the risk of explosion or fire.**



Risk of explosion or fire

- On account of its design, the device is not suitable for use in hazardous (potentially explosive) atmospheres.

- **Do not operate the device in a hazardous atmosphere.**



Danger of personal injury

Dangerous nature of the sample

- Depending on the dangerous nature of your sample, take the necessary measures to rule out any danger to persons.
- **Observe the safety guidelines and datasheets of your sample material.**



Target group: Operator, All persons concerned with the machine in any form.

Machine type designation: RS200

The RS200 vibratory disc mill is used for the fast, loss-free and reproducible pulverisation of medium hard, hard, brittle and fibrous materials to analytical fineness. Thanks to the novel Stabilized Plane Drive, the mill runs smoothly and safely, also with heavy grinding sets and at maximum speed.

The vibratory disc mill is used successfully in almost all areas of industry and research. This applies in particular where there are high demands in terms of hygiene, speed, fineness and reproducibility.

The RS200 is particularly suitable for preparing samples for spectral analysis because it achieves high degrees of final fineness in the shortest time.

Due to its robust design, the RS200 has proven to be especially good in the construction materials sector (cement), in geology, mineralogy, metallurgy and in power plants.

Soil, concrete, electronic components, ores, glass, ceramics, coal, coke, corundum, metal oxide, minerals, plant parts, slag, silicates, cement, cement clinker and many other substances can be ground easily, fast and without loss.

Advantages

- Reproducible grinding results using the "Stabilized Plane Drive" (prevents tumbling of the grinding set)
- Variable speed 700 – 1,500min-1

- Extremely short grinding duration
 - Agate and tungsten carbide recognition for automatic speed reduction
- 10 standard operating procedures can be saved
- No sample loss thanks to optimal O-ring seal
- Wide choice of materials for neutral-to-analysis grinding
- Closed, noise insulated grinding chamber
- Fast-clamping system for the grinding set
 - Insertion system for inserting the grinding set in an ergonomic manner
- Automatic lid closing

NOTICE

Area of use of the machine

- This machine is a laboratory machine designed for 8-hour single-shift operation.
- **This machine may not be used as a production machine nor is it intended for continuous operation.**

NOTICE This device is not designed as a production machine and for continuous operation, but as a laboratory device, intended for single-shift intermittent periodic operation of 8 hours per day.

3.2 Grinding set nominal volume

Hardened steel:	50 / 100 / 250ml
Tungsten carbide:	50 / 100 / 250ml
Agate:	50 / 100ml
Zirconium oxide:	50 / 100ml
Steel (1.1740):	50 / 100 / 250ml

NOTICE

H0065

Wear or damage to the grinding set

No filling or insufficient filling quantity

- Increased wear or damage to the grinding set is possible if the grinding set is operated without filling or with insufficient filling quantity.
- **The grinding set must be filled to at least 1/3 of the nominal volume.**

3.3 Feed Grain Size

In addition to the instrument settings, the filling level of the grinding set is also of crucial importance for a successful grinding process in the Vibratory Disc Mill of Retsch GmbH. The table indicates approximate values for the recommended amount of sample as a function of the grinding set used. A median filling (sample quantity) results in best grinding efficiency and increases the life time of the grinding sets.

Grinding set nominal volume [ml]	Sample quantity [ml]	Max. feed size [mm]
50	15 – 50	< 5
100	35 – 100	< 10
250	80 – 250	< 15

3.4 Rated Power

1500 VA

Make sure that the voltage and frequency of your mains connection corresponds to that on the type plate of the device. The mains connection must be fused to at least 16A.

NOTE

Wear or damage of the device

Operation without grinding set

- During operation of the device without grinding set, excessive wear or damage to the device may occur.
- **Operate the device only with a grinding set mounted.**

3.5 Motor rotation speed

The speed can be adjusted within the following range:

- 700 - 1500min⁻¹

In the case of agate grinding sets, it is not possible to set a speed greater than 700min⁻¹.

In the case of tungsten carbide grinding sets, it is not possible to set a speed greater than 1200min⁻¹.

3.6 Emissions



Possibility of acoustic signals not being heard

Loud grinding noises

- Acoustic alarms and voice communication might not be heard.
- **Consider the volume of the grinding noise in relation to other acoustic signals in the work environment. You may wish to use additional visual signals.**

3.7 Noise levels

Noise measurement in accordance with DIN 45635-31-01-KL3

The noise levels are largely influenced by the machine speed, the grinding material and the grinding set.

Workplace-related emissions value LpAeq = up to 84dB(A)

Sound power level LWA = 99dB(A)

Measurement conditions:

Grinding set: 250ml steel with ring (90/125) and Puk (65)

Sample material: 100g cement clinker, particle size <2mm, 6 C20 grinding aid tablets

Speed: 1450min⁻¹

Sound level meter : Brüel & Kjaer 2237 Controller

3.8 Degree of Protection

IP20

3.9 Protective Equipment

The device is equipped with automatic lid closing which prevents it being started in an unsafe state.

- The device can only be started with closed lid .
- The lid can only be opened when the device has come to a halt.
- The device can only be started with taut clamping lever.
 - The device is switched off automatically if the clamping lever comes loose during grinding.

3.10 Dimensions and Weight

Height: up to approx. 1220 mm / Width : 820 mm / Depth: up to approx. 780 mm

Weight : RS 200 net approx. 225 kg

3.11 Required Floor Space

Height (open hood): 1900mm / Width: 820mm /

Depth: 780mm;

A clearance distance of 100mm is necessary at the back to guarantee space to operate the main switch.

4 Operating the Device

4.1 Views of the device

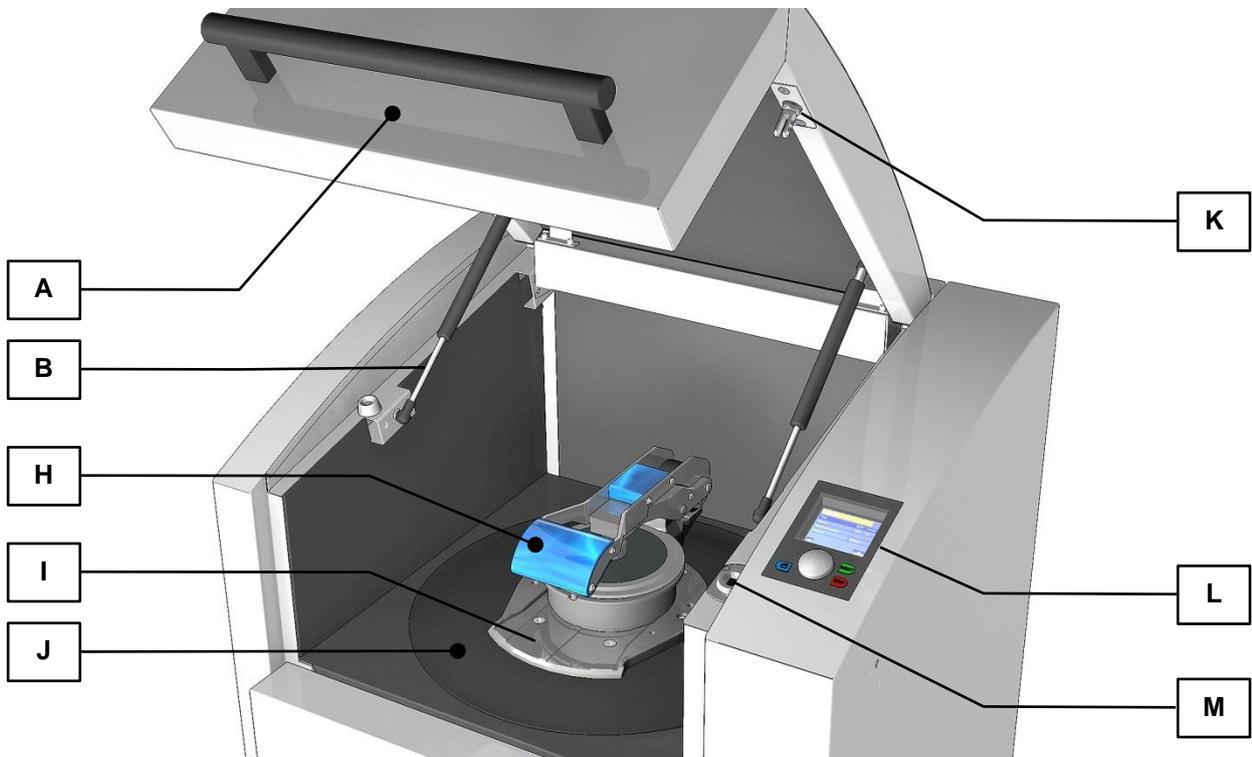


Fig. 11: View of the device from the front

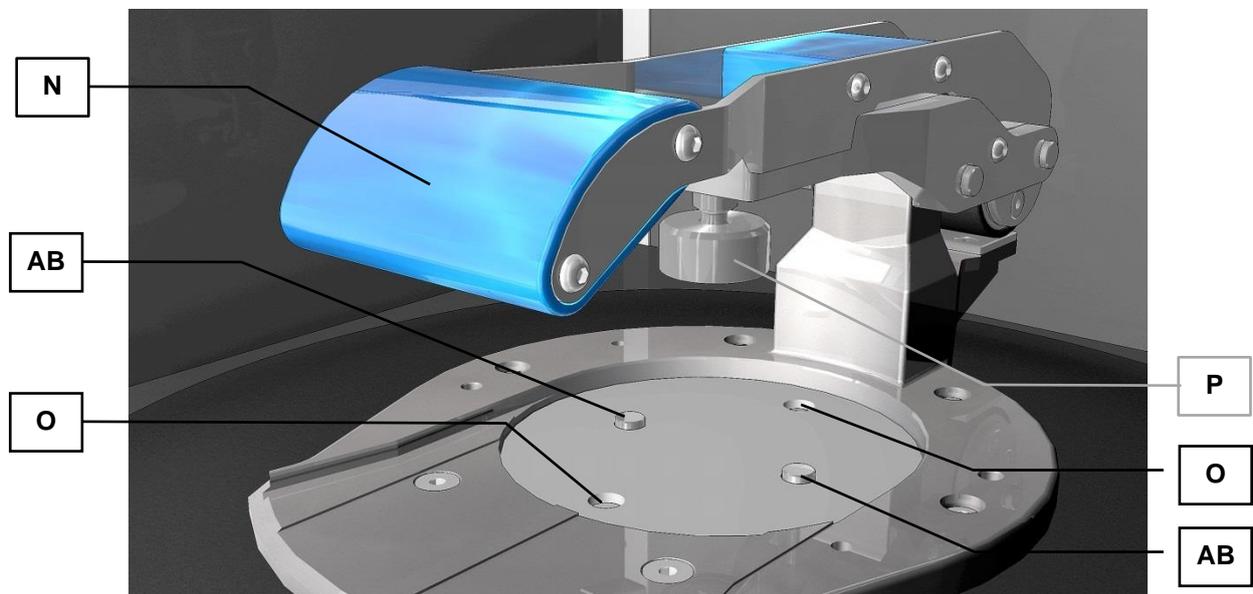


Fig. 12: Close-up of the grinding chamber

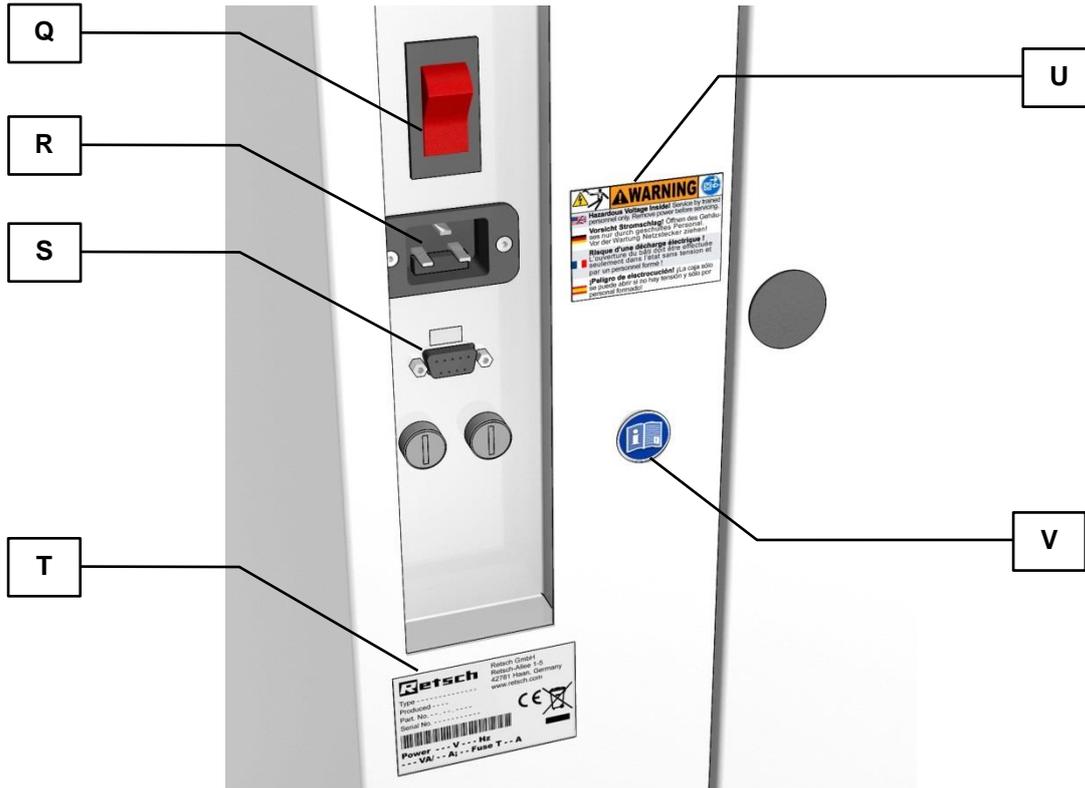


Fig. 13: View of the back of the device

4.2 Overview table of the parts of the device

Element	Description	Function
AB	Locking bolt	Locks the grinding set
A	Hood	Closes the grinding chamber
B	Damper for hood	Secures the hood when it is open
H	Clamping unit for the grinding set	Clamps the grinding set onto the holder
I	Holder for the grinding set	Support for grinding set and centering aid
J	Rubber seal	Seals the inside of the housing of the grinding chamber
K	Pin closing mechanism	Safety lock for the hood
L	Control panel	Device controller
M	Closing mechanism	Support for pin closing mechanism
N	Handle for clamping unit	Handle to close the clamping unit
O	Sensor for grinding set type	Automatic grinding set recognition
P	Clamping block	Clamps the grinding set by means of the clamping lever
Q	Main switch	Disconnects the device from the mains
R	IEC socket	Power supply for the power cable
S	Serial interface	Interface for communication with the device
T	Type plate	Description of device parameters
U	Warning sign to pull out the plug	Warning of electric shock
V	Sign with instruction to read the operating manual	Sign pointing out the need to read the operating manual

4.3 Operating elements and displays



Fig. 14: View of the control panel

4.4 Overview Table of the Operating Elements and the Display

Element	Description	Function
F	Operating button (rotary/push button)	Rotary control to operate the device settings
G	Button to open the hood	Unlocks the hood
C	Display	Displays the control functions and parameters
D	START button	Starts grinding
E	STOP button	Stops grinding

4.5 Opening the device

The following steps are necessary in order to be able to use and clamp the grinding set.

- Connect the device to the mains.
- Switch on the main switch at the back of the device.
- Press the  button.

The safety lock opens and the lid can be lifted up

4.6 Closing the device

It is only possible to lock the grinding chamber if the device has been connected to the power supply and the main switch at the back of the device has been switched on.

- Shut the housing lid.
 - A sensor detects the closing pin of the housing lid and the motorised lid closing mechanism is switched on.
- The housing lid is locked automatically.

4.7 Emergency Unlocking

⚠ CAUTION

Emergency Unlocking

Drive continuing to run

- There is a substantial risk of injury if the drive and associated device parts run on a long time without being braked!
- **Activate the emergency unlocking only when the machine has come to a complete stop and is disconnected from the power supply.**

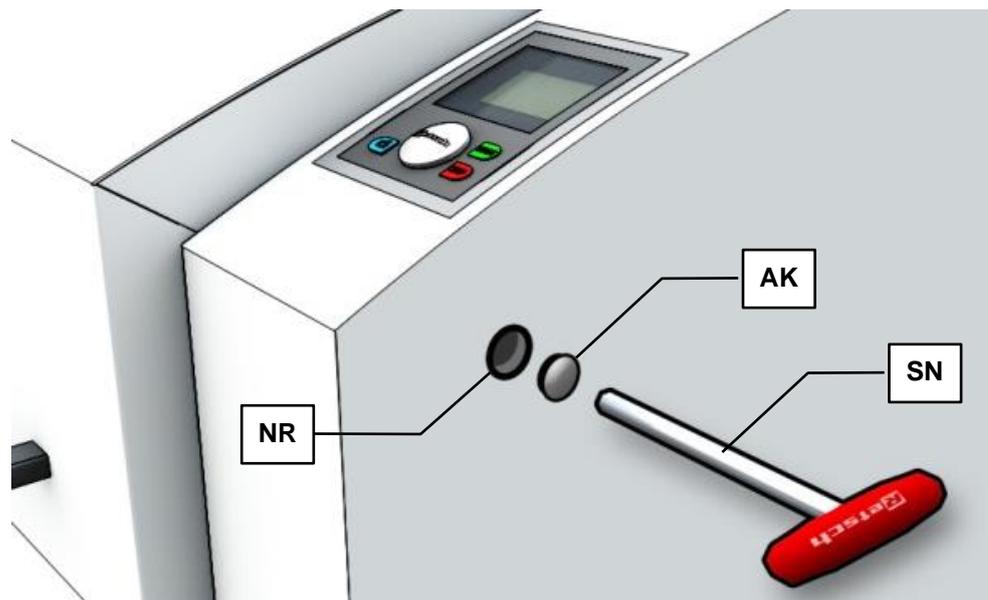


Fig. 15: Emergency release

A key is provided with device delivery. This can be used to open the device manually in the case of a power failure .

- Remove the cap (AK).
- Place the key (SN) in the opening (NR).
- To unlock the gear mechanism, it is necessary to push the key in further using a little force.

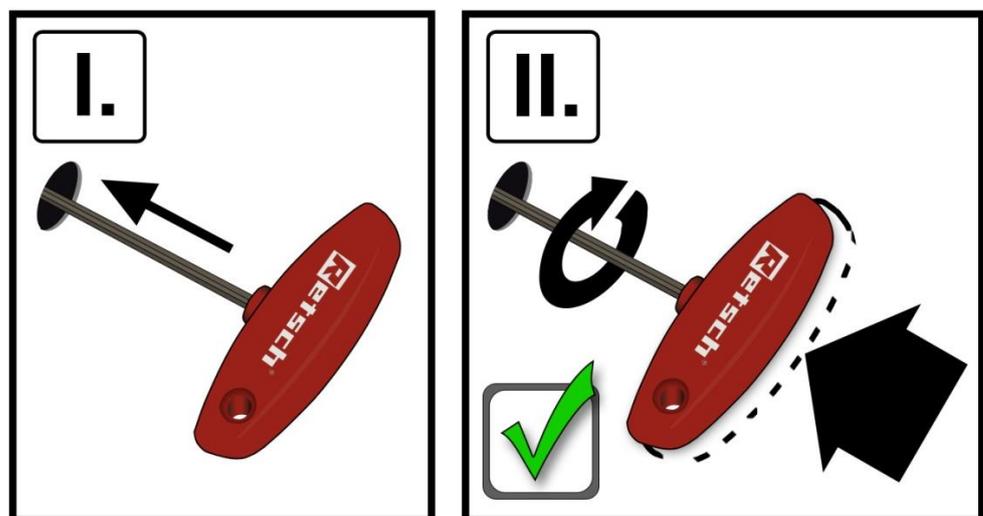


Fig. 16: Emergency release procedure

- At the same time as pushing the key (**SN**) in, rotate it in a clockwise direction as far as it will go.
- The lock is open and the lid can be lifted up.

4.8 Insert the grinding set into the grinding set holder

NOTE

Wear or damage of the device

Operation without grinding set

- During operation of the device without grinding set, excessive wear or damage to the device may occur.
- **Operate the device only with a grinding set mounted.**

4.8.1 Grinding set



Fig. 17: Grinding set

The RS200 can be used with a Retsch grinding set with a volume of 50 / 100 / 250ml and with special steel / agate / tungsten carbide materials.

4.8.1.1 Tungsten carbide (TC) grinding sets

Only use tungsten carbide grinding sets in the RS200 at speeds of $\leq 1200\text{min}^{-1}$.

**RS200 Max. speed with TC
 $\leq 1200\text{min}^{-1}$**

Do not use a grinding set with 4 identical holes (diameter 13 mm) underneath.

Grinding set material		Number of drilled holes	Drilled hole 25mm	Drilled hole 13mm	Reworking possible	No reworking required
TC (old)		2	-	2	Yes	-
Agate (old)		4	-	4	Yes	-
TC (new)		3	1	2	-	Ok
Steel (all types); zirconium oxide		2	-	2	-	Ok
Agate (new)		4	2	2	-	Ok

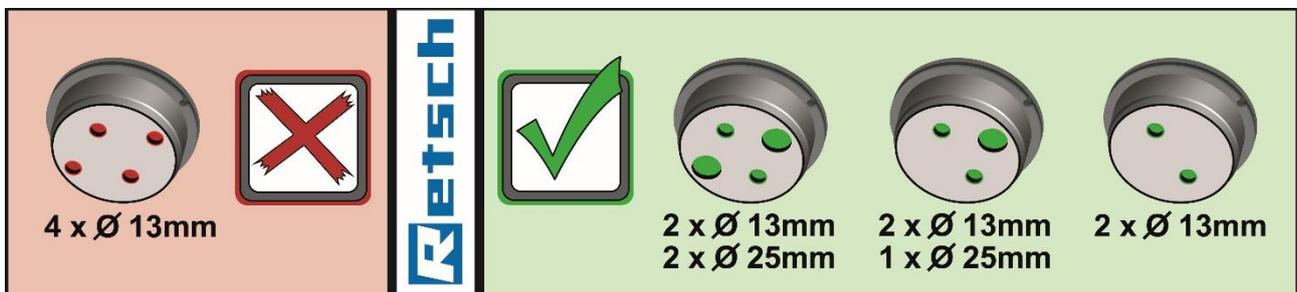


Fig. 18: Device sticker Note Grinding set

4.8.2 Preparing the grinding process

Place a disc and a ring on the grinding jar.

- Position the ring and disc as shown in the diagram.

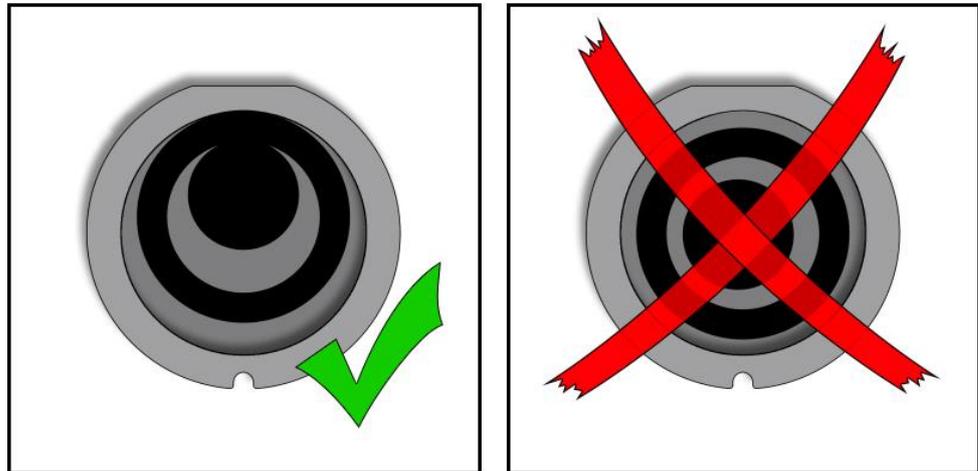


Fig. 19: Positioning the ring and disc

- Fill grinding material into the space (**RZ**) between the grinding jar wall (**MW**) and the inner ring (**RE**).
- For best grinding results, the area (**RS**) between the inner ring (**RE**) and the disc (**SC**) must remain empty.

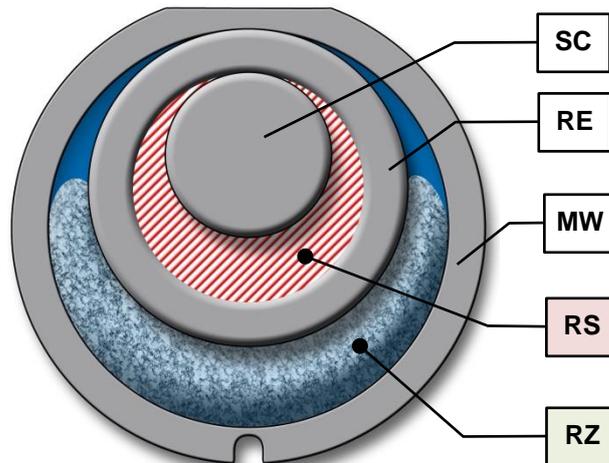


Fig. 20: Filling area of the grinding set

- Remove any residual grinding material on the grinding jar wall, the inner ring and the disc, e.g. using a brush.
- Check whether the lid seal has been inserted.
- Close the grinding set with the lid.
- Open the clamping lever (**SH**).
- Push the grinding set into the holder.

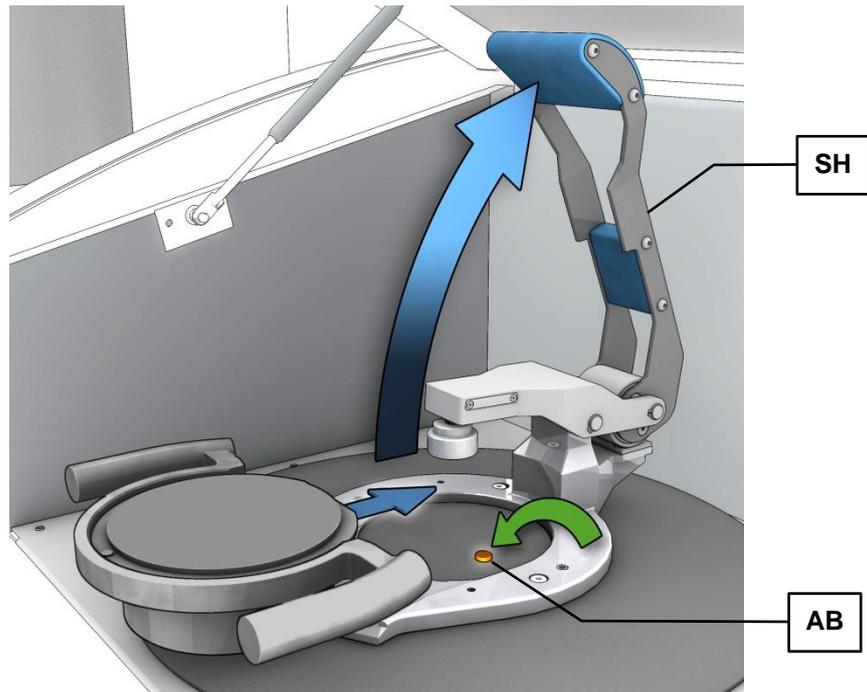


Fig. 21: Inserting the grinding set

- Ensure that the grinding set engages in the locking bolt (**AB**).

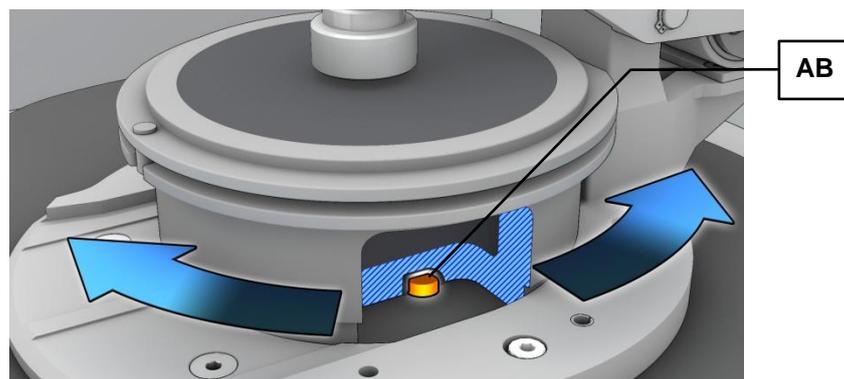


Fig. 22: Locking bolt

- Where necessary, turn the grinding set slightly to engage it in the locking bolt (**AB**).

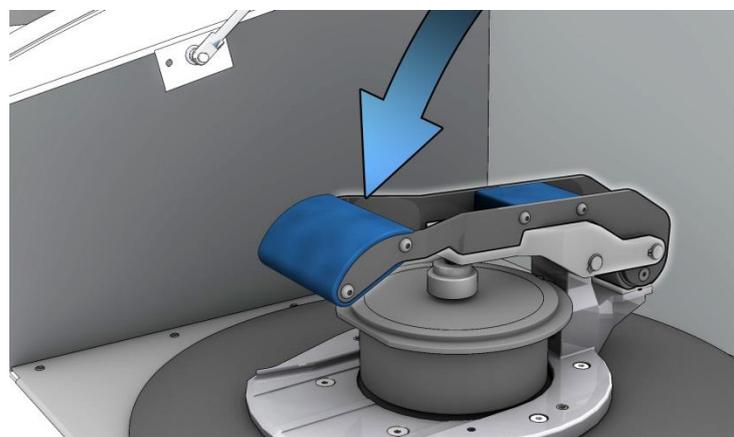


Fig. 23: Clamping the grinding set

- Clamp the grinding set using the clamping lever (SH).
- You can then close the hood and start the device.

CAUTION

Scalding/burns

Heated grinding set and/or sample material

- The sample material and the grinding set can become very hot during the grinding process.
- **After the grinding set process has been completed, handle the grinding set only with protective gloves.**
- **Never open the hot grinding set.**
- **Allow the grinding set and the sample material to cool down to room temperature before opening.**

The clamping device for the grinding set is easy to handle and reliable. The basic prerequisite for the safety of the operator as well as for the service life of the machine components is the conscientious clamping of the grinding set.

Please remember that this device concerns grinding equipment which applies very high amounts of energy into the sample material, and that the grinding set therefore needs to be locked into position carefully.

- The device can only be started when the clamping lever has been clamped.
 - The device is automatically switched off if the clamping lever comes loose during grinding.

4.9 Carrying aid for the grinding set

Useful volume	50ml					100ml				250ml		
Material	Steel	TC	Agate	Zirconium oxide	Steel 1.1740	Steel	TC	Agate	Zirconium oxide	Steel	TC	Steel 1.1740
Insert	Steel	TC	Agate	Zirconium oxide	Steel 1.1740	Steel	TC	Agate	Zirconium oxide	Steel	TC	Steel 1.1740
1	x	x			x							
2			x									
3				x								
4							x					
Without insert						x		x	x	x	x	x



Fig. 24: Insert 1 for 50 ml grinding set (steel, WC)



Fig. 25: Insert 2 for 50 ml grinding set (agate)



Fig. 26: Insert 3 for 50 ml grinding set (zirconium oxide)

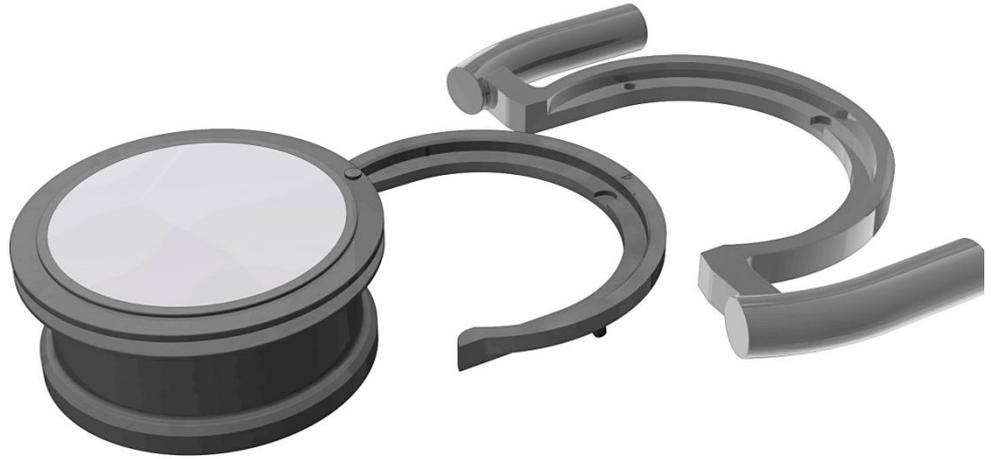


Fig. 27: Insert 4 for 100 ml grinding set (WC)



Fig. 28: Without insert for 250 ml and all other grinding sets

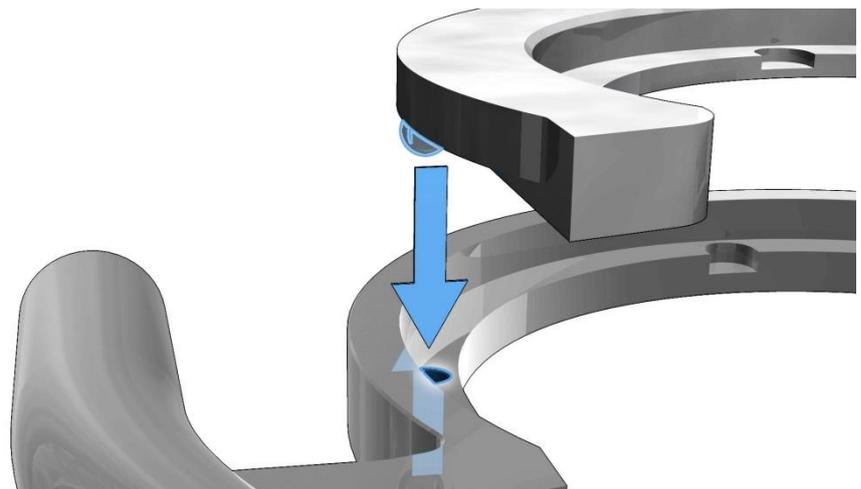


Fig. 29: Inserting the insert

4.10 Display unit – operation of the device

4.11 Symbols in the Display Unit

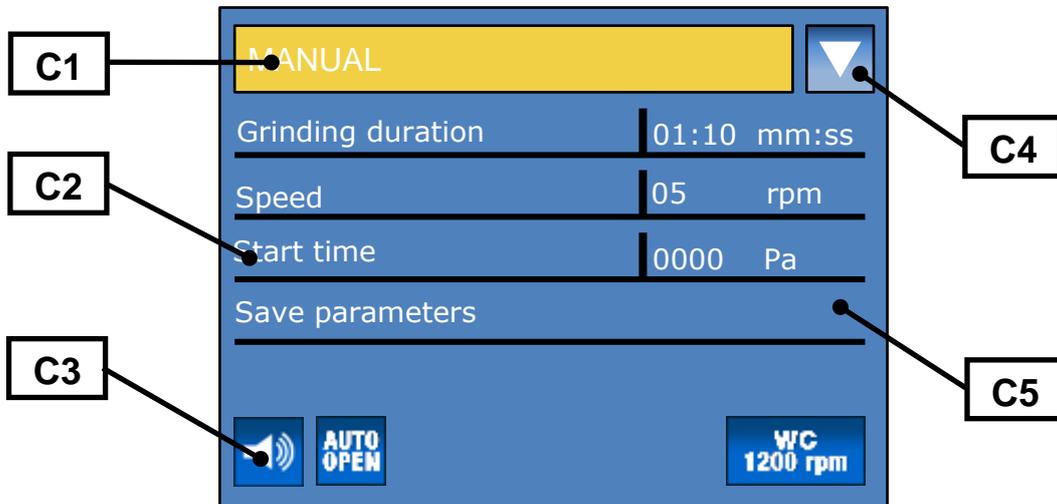


Fig. 30: View of the menu on the display unit

Element	Description	Function
C1	Menu navigation	Switching between manual operating mode, program and basic settings
C2	Specification of grinding parameters	Displaying and setting grinding parameters
C3	Icons for device functions	Displaying the functional statuses of sound, automatic opening and grinding set recognition
C4	Icon for scrolling direction	Displays the possible scrolling directions
C5	Grinding parameters	Display of values
	Automatic opening switched on	
	Automatic opening switched off	
	Automatic grinding set recognition – agate detected	
	Automatic grinding set recognition – TC detected	
	Acoustic warning signal on	
	Acoustic warning signal off	
	Scrolling upwards or downwards possible	
	Only scrolling upwards possible	
	Only scrolling downwards possible	

This device offers a new, very convenient user interface. All relevant data can be entered and retrieved using a graphics display with one-button operation. The menu is available in different languages.

4.11.1 Adjustment options using the display menu

The selection bar in the display should be operated as follows:

Rotating function I)

- Rotate the operating button to get to the different menu items. The selected menu items are marked by the dark selection bar. Areas that cannot be changed are skipped.

Rotating function II)

- Rotate the operating button to change numerical values and decisions in the menu items.

Press I)

- Press the operating button to open selected menu items.

Press II)

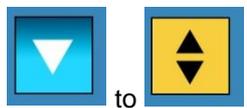
- Press the operating button to confirm settings.

Press III)

- Keeping the operating button pressed for longer takes you back to the basic screen (Level 1).

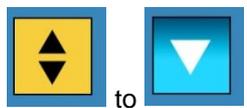
4.11.2 Navigating between operating modes

- Rotate the operating button in a clockwise direction until the dark line cursor is in the navigation menu (C1).
- Press the operating button (F).
- The icon for the scrolling direction (C4) changes from



- By pressing the operating button, navigate between manual operation, Programs 01 to 10 and the basic settings operating modes.
- Press the operating button (F) to activate the selected operating mode.

- The icon for the scrolling direction (C4) changes from



- By rotating the operating button, switch to the sub-items of the selected menu item.

4.12 Direct access to the language menu

If you have unintentionally set the wrong language, you can go straight to the language menu by following the steps below.

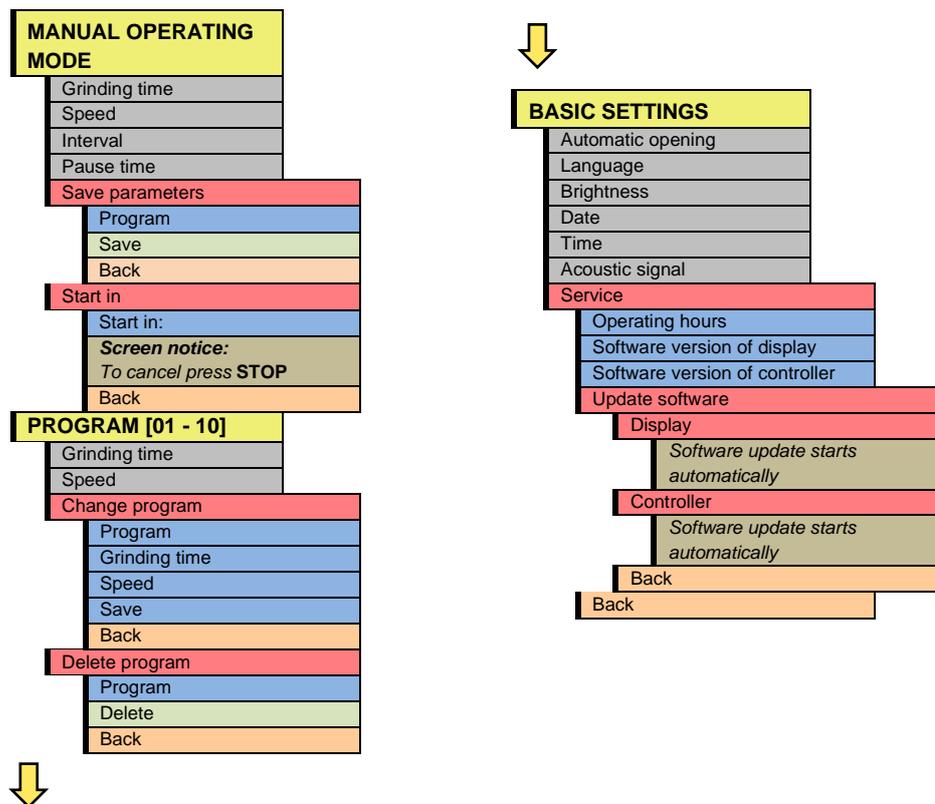


- Switch the device off at the main switch.
 - Switch the device on while simultaneously pressing the buttons **START - STOP – Open hood**.
 - After selecting the correct language, switch the device off and then immediately back on.
- Confirm your selection by pressing the operating button.

The device is now set permanently to your language and you are in the main menu.

4.13 Menu structure

Complete overview of all menu items:



4.14 Operating modes

You can select the following operating modes using the menu navigation (C1):

4.14.1.1 Manual operating mode

If this function has been set, you can call up and change all parameters and functions at any time. This is also possible during milling.

4.14.1.2 Program 01 to 10

The previously set parameters, grinding duration and speed can be saved in the memory in Programs 01 to 10.

4.14.1.3 Basic settings

The following device settings can be adjusted in this settings menu:

- Automatic opening
- Language
- Brightness
- Date
- Time
- Acoustic warning signal
- Service

4.15 Manual Mode

4.15.1 Grinding duration

00:01 to 99:59 (minutes : seconds)

4.15.2 Speed

700 to 1500 rpm

4.15.3 Interval

The interval time can be set here according to the grinding time.

4.15.4 Pause time

This is where the pause time between the intervals can be set.

The device is started with the preselected grinding duration, speed and set pause time. The device rotates at the set interval time. After the time has elapsed, the device stops for a few seconds. As soon as it stops, the interval time display shows the previously set pause time and counts down to 00:00:00.

Once the pause time has elapsed, the device starts with the next interval time.

4.15.5 Save parameters

You can save previously set parameters such as grinding duration and speed in a memory here.

- Set the desired parameters.
 - By rotating the operating button (F), switch to the **Save parameters** menu item.
 - Press the operating button (F).
 - The **Save parameters** menu opens and the dark line cursor is placed on **Program**.
 - Press the operating button (F) to select a storage location for the program.
 - By rotating the operating button (F), switch to the desired storage location.
 - Press the operating button (F) to exit the storage location selection.
 - Select either
 - **Save** to save the settings or
 - **Back** to cancel without saving.

4.15.6 Start in

00:00:01 to 99:59:59 (hours : minutes : seconds)

You can adjust a countdown to the starting of the device here.

- Press the STOP button to cancel the countdown.

4.16 Programme Mode

4.16.1 Grinding duration

Display of the saved grinding duration:
00:01 to 99:59 (minutes : seconds)

4.16.2 Speed

Display of the saved speed:
700 to 1500 rpm

4.16.3 Change program

You can change the saved parameters of any program in this menu.

- By rotating the operating button (**F**), switch to the **Change program** menu item.
- Press the operating button (**F**).
- The **Save parameters** menu opens and the dark line cursor is placed on **Program**.

NOTICE

You can change the active program or any other program.

- Press the operating button (**F**) to activate the program selection.
- By rotating the operating button (**F**), switch to the desired storage location.
- Press the operating button (**F**) to exit the storage location selection.
- Set the desired grinding parameters.
- To finish, select either
 - **Save** to save the settings or
 - **Back** to cancel without saving.
- You will then return to the Program level.

NOTICE

It is not possible to start a program that has not been saved.

4.16.4 Delete program

In this menu you can delete the stored parameters of any program.

NOTICE

Only the parameters stored in the respective program are deleted. The program is still saved in the designated location.

- By rotating the operating button (**F**), switch to the **Delete program** menu item.
- Press the operating button (**F**).
- The **Delete program** menu opens and the dark line cursor is placed on **Program**.
- Press the operating button (**F**) to activate program selection.
- By rotating the operating button (**F**), switch to the desired program.
- Press the operating button (**F**) to exit the program selection.
- To finish, select either
 - **Delete** top delete settings or
 - **Back** to cancel without saving.
- You will then return to the Program level.

4.17 Basic settings

NOTICE

No grinding can be started while the basic settings menu is active.

4.17.1 Automatic opening

In this menu you can set whether the grinding chamber lid opens automatically when grinding has finished or is only opened when the button is pressed.

If the function is switched off, the following pictogram is shown on the display as confirmation.



Fig. 31: Pictogram for automatic opening

4.17.2 Language

You can select the menu language here. After selecting the language and pressing the operating button, the entire menu structure is displayed in your language.

NOTICE

The language menu is displayed when the device is switched on for the first time.

- Select the language of the country by pressing the operating button.
- Press to confirm the selection; “Open lid” appears in the display.

4.17.3 Brightness

The brightness can be adjusted to the respective user or environment (sunshine, glare etc.).

4.17.4 Date

The current date can be entered here.

The device can be disconnected from the mains for up to 30 days before the settings are lost.

4.17.5 Time

The time can be entered here.

The time then appears in the stand-by monitor.

The device can be disconnected from the mains for up to 30 days before the settings are lost.

4.17.6 Acoustic warning signal

Error messages in the event of incorrect operation can be supported acoustically by an acoustic warning signal. The corresponding pictogram appears if the function has been switched off

4.17.7 Service

4.17.7.1 Operating hours

Grinding hours are counted, i.e. the total times between START and STOP. The times cannot be manipulated.

4.17.7.2 Software version of display

Shows the software version of the display.

4.17.7.3 Software version of controller

Shows the version of operating software.

4.17.7.4 Update software

SOFTWARE VERSION

The version of the operating software can be called up and updated as required. If necessary, get in touch with your Retsch distributor.

Should you have reached this menu by mistake and cannot return to the previous menu, switch the device off at the main switch and re-start it.

5 Error Messages and Information Notes

5.1 Error Messages

Error messages inform the user about detected device or programme errors. In the event of an error message, a fault has occurred, in which the operation of the device or the programme is automatically interrupted. Such faults must be resolved before next startup.

Error code	Description	Measures
E10	Drive overload	⇒ Switch off the main switch and wait for 30 s before switching on again. ⇒ If the error persists, contact service.
E20	Failure main board	⇒ Switch off the main switch and wait for 30 s before switching on again. ⇒ If the error persists, contact service.
E25	Failure display	
E26	Failure frequency converter	
E50	Failure safety circuit	
E51	Failure safety switch (locking mechanism)	
E52	Failure switch 1 (clamping bracket not closed)	

5.2 Information Notes

Notices inform the user on specific device or programme processes. The operation of the device or programme may be interrupted briefly, but there is no fault. The information notice must be acknowledged by the user to continue the process. Information notices provide additional information for the user as an aid, but do not represent any device or programme errors.

Notice code	Description	Measures
H10	Allow drive to cool down	⇒ The drive is overheated, let the device cool down. ⇒ Start the grinding process again after cooling.
H41	Close grinding chamber	⇒ Check whether the grinding set is clamped correctly.
H42	Open and close lid/cover	⇒ Confirm the message on the control panel. ⇒ Open the hood.
H45	Interruption due to a power failure	⇒ Confirm the message on the control panel. The last grinding can continue.

6 Cleaning, Wear and Maintenance

⚠ WARNING

Risk of a fatal electric shock

- An electric shock can cause injuries in the form of burns and cardiac arrhythmia, respiratory arrest or cardiac arrest.
- **Do not clean the blender under running water. Use only a cloth dampened with water.**
- **Disconnect the power supply plug before cleaning the blender.**

⚠ WARNING

The device must always be switched off and disconnected from the mains before any interventions for cleaning or servicing purposes.

W0012

6.1 Cleaning

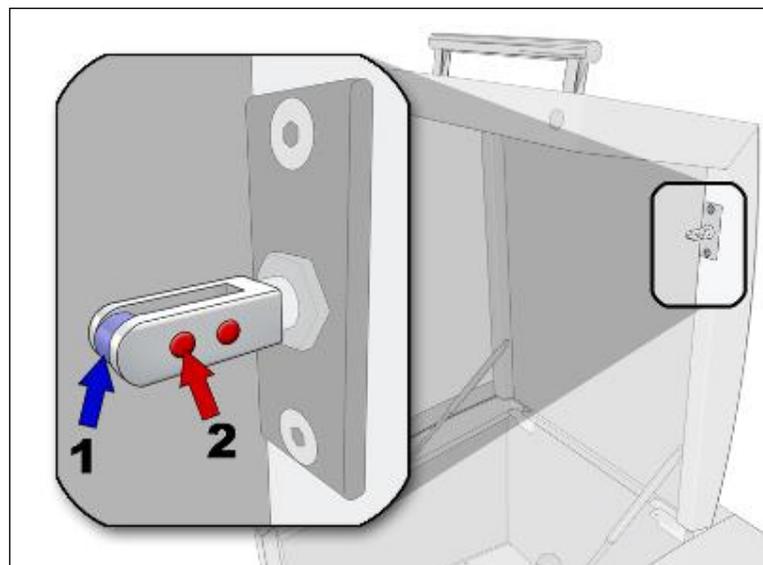


Fig. 32: Closing pin maintenance

The following maintenance work should be carried out at regular intervals, and at least monthly to guarantee the operational safety of the device:

- Check roller (1) of the closing pin for free movement, and oil where necessary, e.g. using sewing machine oil.
- Clean the magnets (2) on the closing pin.

6.2 Maintenance

WARNING

W0016

Risk of loss of life through electric shock

Strong voltage through capacitor discharge

- Due to capacitor discharge on the frequency inverter, the device conducts voltage for up to **3 minutes** after the plug has been pulled out.
- You may come into contact with live contacts when the device is open. An electric shock can lead to burns and arrhythmia or to respiratory failure and heart failure.
- **After removing the mains lead, wait 3 minutes before opening the device.**

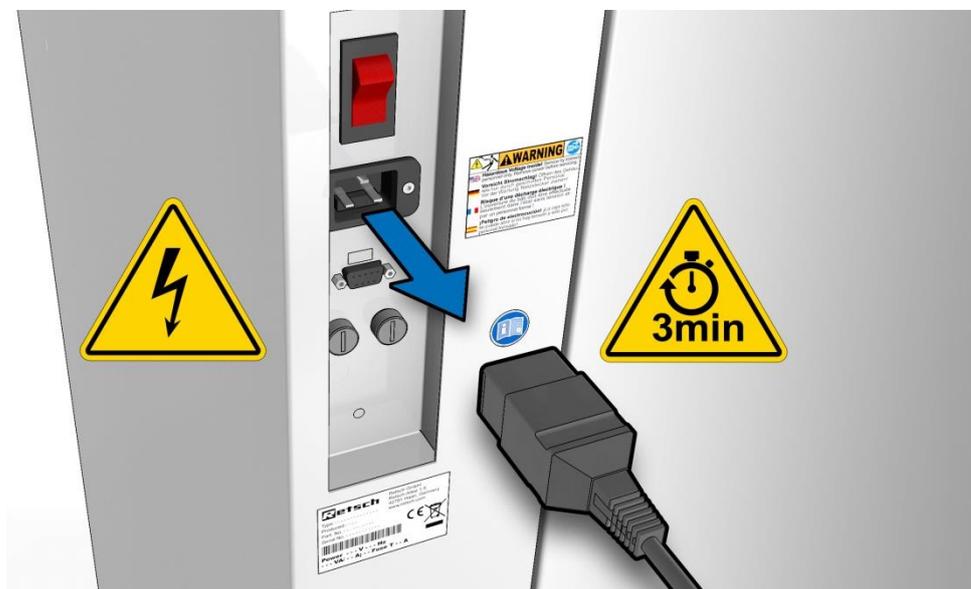


Fig. 33: Disconnecting the plug

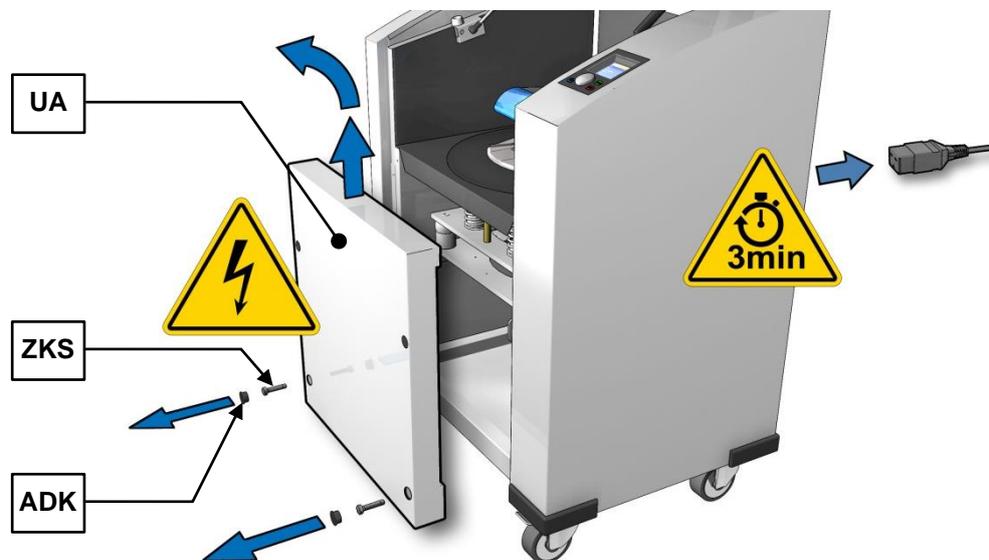


Fig. 34: Removing the cover

- Press the open hood button and open the hood.
- Remove the bottom caps (**ADK**).
- Unscrew the two cylinder head bolts (**ZKS**).
- Pull the bottom suspension (**UA**) upwards to unhinge it.

NOTICE

- The three rubber springs (**GF**) must be lubricated again at the top and bottom end of the guide bolts every 250 operating hours. Use Klüber high performance lubricating grease type “Staburags NBU 4MF” or an equivalent high performance lubricant.
- To do this, remove the rubber springs and apply a sufficient quantity of grease in the two openings.

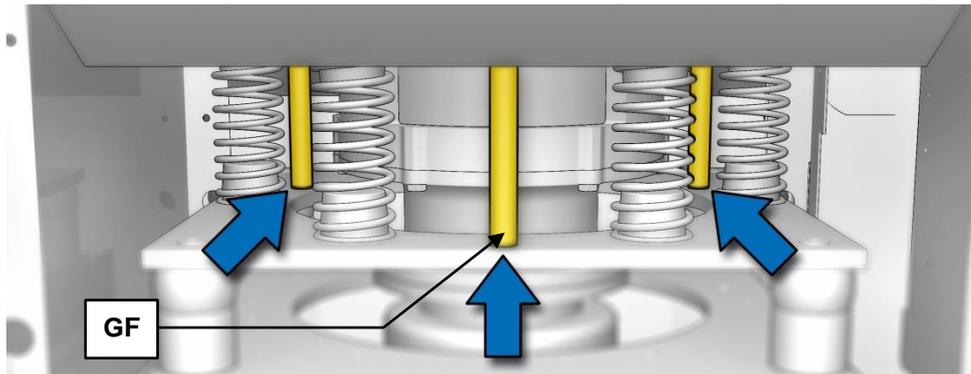


Fig. 35: Positions of the rubber springs

- After servicing the rubber springs, insert the bottom cover.
- Secure the bottom cover using the two cylinder head bolts.

6.3 Wearing parts

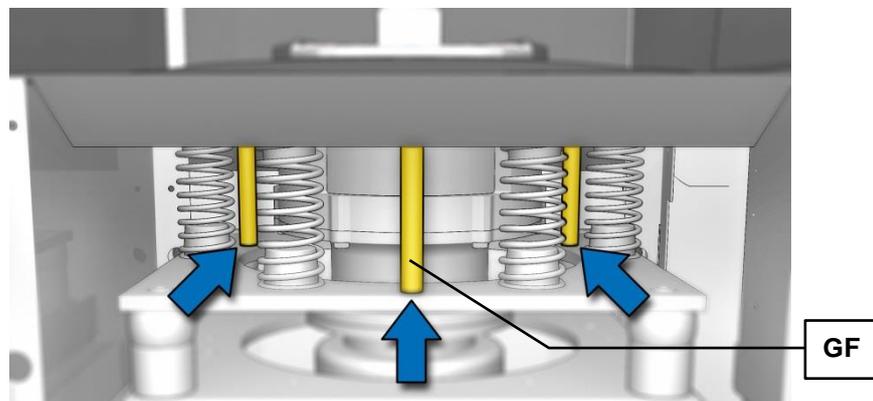


Fig. 36: Rubber springs

- Replace the 3 rubber springs (**GF**) after approx. 500 operating hours.
- Order No. 03.228.0003

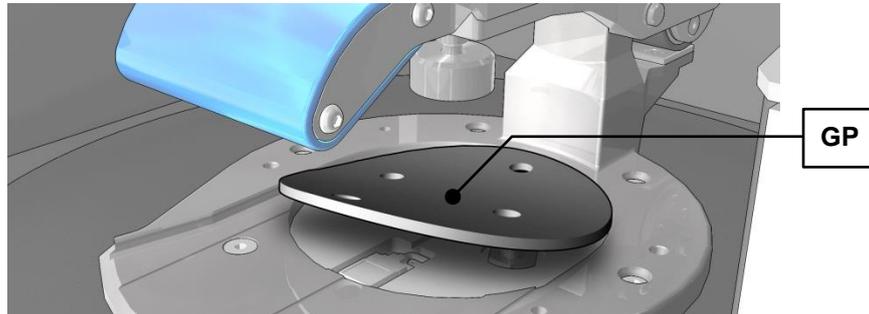


Fig. 37: Rubber pad

- Replace the rubber pad (**GP**) after approx. 300 operating hours.
- Order No. 03.243.0069

7 Return for Service and Maintenance



Fig. 38: Returned goods dispatch note

RETSCH devices and accessories can only be accepted for repair, maintenance or calibration if the returned goods despatch note has been correctly completed in full.

- When returning a device, attach the returned goods dispatch note to the outside of the packaging.

In order to eliminate any health risk to our employees, we reserve the right to refuse acceptance and to return the respective delivery at the expense of the sender.

8 Disposal

Please observe the respective statutory requirements with respect to disposal.

Information on disposal of electrical and electronic machines in the European Community.

Within the European Community the disposal of electrically operated devices is regulated by national provisions that are based on the EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

Accordingly, all machines supplied after 13.08.2005 in the business-to-business area to which this product is classified, may no longer be disposed of with municipal or household waste. To document this they have the following label:

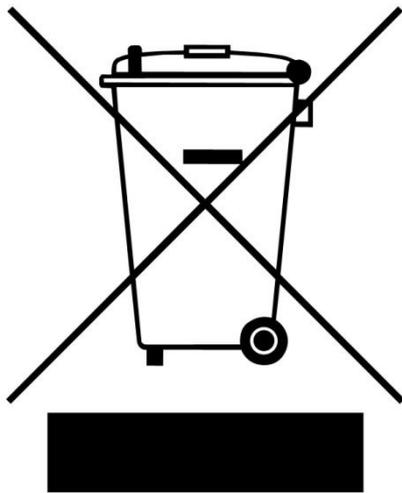


Fig. 39: Disposal label

Since the disposal regulations within the EU may differ from country to country we would request you to consult your supplier.

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VIBRATORY DISC MILL

RS 200 | 20.730.xxxx

EU DECLARATION OF CONFORMITY

We, represented by the undersigned, hereby declare that the above device complies with the following directives and harmonised standards:

Machinery Directive 2006/42/EC

Applied standards, in particular:

DIN EN ISO 12100	Machine Safety - General Design Principles
DIN EN 61010-1	Safety Regulations for Electrical Measurement, Control, Regulation and Laboratory Devices

Electromagnetic compatibility 2014/30/EU (tested at 230 V, 50 Hz)

Applied standards, in particular:

EN 55011	Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement
DIN EN 61326-1	Electrical equipment for measurement, control and laboratory use - EMC requirements

Restriction of hazardous substances (RoHS) 2011/65/EU

Authorised person for compilation of the technical documentation:

Julia Kürten (Technical Documentation)

Furthermore, we declare that the relevant technical documentation for the above device has been prepared in accordance with Annex VII Part A of the Machinery Directive and we undertake to submit the documentation to the market surveillance authorities on request.

In the event of a modification of the device not agreed on by Retsch GmbH, as well as the use of non-approved spare parts or accessories, this declaration loses its validity.

Retsch GmbH

Haan, 09/2023



Dr. Stefan Mähler, Technical Manager





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