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Germany
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# Notes on the Manual

This Manual provides technical guidelines for the safe operation of the device. Read this Manual through carefully before installing, putting into service and operating the device. Reading and understanding this Manual is essential for handling the device safely and as intended.

This Manual does not contain any repair instructions. Please contact your supplier or contact Retsch GmbH directly if anything is unclear or you have questions about these guidelines or the device, or in the case of any faults or necessary repairs.

You can find further information about your device at [http://www.retsch.com](http://www.retsch.com) on the pages for the specific device concerned.

**Amendment status:**
The document amendment 0003 of the "Vibratory Disc Mill RS 300" manual has been prepared in accordance with the Machinery Directive 2006/42/EC.

## 1.1 Disclaimer

This Manual has been prepared with great care. We reserve the right to make technical changes. We assume no liability for personal injuries resulting from the failure to follow the safety information and warnings in this Manual. No liability will be assumed for damage to property resulting from the failure to follow the information in this Manual.

## 1.2 Copyright

This document or parts of it or its content may not be reproduced, distributed, edited or copied in any form without prior written permission of Retsch GmbH. Damage claims shall be asserted in the case of infringements.
1.3 Explanations of the Safety Instructions

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

---

**DANGER**

Risk of fatal injuries
Source of danger
- Possible consequences if the danger is ignored.
  - Instructions and information on how to avoid the risk.

Fatal or serious injuries may result if the “Danger” sign is disregarded. There is a very high risk of a life-threatening accident or lasting personal injury. The signal word **DANGER** is additionally used in the running text or in instructions.

---

**WARNING**

Risk of life-threatening or serious injuries
Source of danger
- Possible consequences if the danger is ignored.
  - Instructions and information on how to avoid the risk.

Life-threatening or serious injuries may result if the "Warning" sign is disregarded. There is an increased risk of a serious accident or of a possibly fatal personal injury. The signal word **WARNING** is additionally used in the running text or in instructions.

---

**CAUTION**

Risk of injuries
Source of danger
- Possible consequences if the danger is ignored.
  - Instructions and information on how to avoid the risk.

Average to slight injuries may result if the “Caution” sign is disregarded. There is an average or slight risk of an accident or personal injury. The signal word **CAUTION** is additionally used in the running text or in instructions.
NOTICE

Type of damage to property
Source of the damage to property
  – Possible consequences if the information is ignored.
  • Instructions and information on how to avoid the damage to property.

Damage to property may result if the information is disregarded. The signal word NOTICE is additionally used in the running text or in instructions.
1.4 General Safety Instructions

**CAUTION**

Risk of injury
Lack of knowledge of the Manual
- The Manual contains all safety-related information. Disregarding the Manual can therefore lead to injuries.
- **Read the Manual carefully before operating the device.**

Target group
All those operating, cleaning or working with or on the device.

This device is a modern, powerful product from Retsch GmbH and has been developed in line with the state-of-the-art. The device is safe to use when operated correctly and when following the instructions in this manual.

**CAUTION**

Risk of injury
Improper modifications to the device
- Improper modifications to the device can result in injuries.
- **Do not make any unauthorised changes to the device.**
- **Only use the spare parts and accessories approved by Retsch GmbH!**

**NOTICE**

Changes to the device
Improper modifications
- The conformity declared by Retsch GmbH with the European Directives will lose its validity.
- Any warranty claims will be terminated.
- **Do not make any modification to the device.**
- **Use spare parts and accessories that have been approved by Retsch GmbH exclusively.**
1.5 Repairs

This manual does not contain any repair instructions. For safety reasons, repairs may only be carried out by Retsch GmbH or an authorised representative or by qualified service technicians.

In case of repair, please inform...

...the Retsch GmbH representative in your country,
...your supplier, or
...Retsch GmbH directly.

Service address:
1.6 Responsibility of the operating company

The company operating the machine is responsible for ensuring that every person working with the machine has been given precise instructions on the basis of this manual (commissioning, operation, servicing). Training for operating staff must include the following points:

- Intended use of the machine
- Hazard areas
- Safety regulations
- The company must be satisfied that staff have the required qualifications
- General instructions and what to do in an emergency
- Applicable accident prevention regulations
- Personal protective clothing required
- Operation of the machine according to this manual
- Recognised, applicable rules governing health and safety

Involve RS 300 in your emergency planning:

- Integrate RS 300 in your operating instructions regulating conduct in emergency situations.
- Integrate RS 300 in your risk assessment in acc. with the German Ordinance on Industrial Safety and Health (BetrSichV) to prevent accidents during work processes.
- Consider fire-fighting measures, tackling the effects of leaking substances, possible radiation, rescuing people, first-aid measures.

1.7 Personnel qualification and target group of this manual

This manual is intended for trained assembly personnel, maintenance staff and users. Training must be provided in the language of the personnel concerned so that all instructions are understood. As such the following personnel qualifications are necessary:

<table>
<thead>
<tr>
<th>Assembly, commissioning, instruction, troubleshooting, servicing work, as described in this manual</th>
<th>Skilled technical staff as well as external service providers who speak German and the language of the operating personnel. The usual skills communicated during training, e.g. as a plant fitter, mechatronics engineer or toolmaker, are prerequisites for the assembly, commissioning and troubleshooting of the machine. Employees must be able to manage all applicable mechanical tasks and be familiar with and have experience of dealing with these.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation</td>
<td>Education/training in accordance with the above section, responsibilities of trained employees.</td>
</tr>
<tr>
<td>Servicing/repairs</td>
<td>They must be experienced, trained professionals, familiar with requirements and guidelines.</td>
</tr>
</tbody>
</table>
2 Confirmation Form for the Managing Operator

This manual contains essential instructions for operating and maintaining the device which must be strictly observed. It is essential that they be read by the user and by the qualified staff responsible for the device before the device is commissioned. This 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 he has received sufficient instructions about the operation and maintenance of the system. The user has received the 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.

The managing operator should for legal protection have the user confirm the instruction about the operation of the device.

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

<table>
<thead>
<tr>
<th>User</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surname, first name (block letters)</td>
</tr>
<tr>
<td>Position in the company</td>
</tr>
<tr>
<td>Place, date and signature</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Managing operator or service technician</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surname, first name (block letters)</td>
</tr>
<tr>
<td>Position in the company</td>
</tr>
<tr>
<td>Place, date and signature</td>
</tr>
</tbody>
</table>
3  Packaging, Transport and Installation

3.1  Packaging

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

**NOTICE**

Complaint or return
Keeping the packaging

- Inadequate packaging and insufficient securing of the device can jeopardise the warranty claim in the event of a complaint or return.
- Keep the packaging for the duration of the warranty period.

3.2  Transport

**NOTICE**

Damage to components
Transport

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

**NOTICE**

Complaints
Incomplete delivery or transport damage

- 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.
- Please check the delivery on receipt of the device for its completeness and intactness.
- Notify your forwarding agent and Retsch GmbH within 24 hours.

3.3  Temperature Fluctuations and Condensation

**NOTICE**

Damaged components due to condensation
Temperature fluctuations

- The device may be exposed to substantial fluctuations in temperature during transport. The ensuing condensation can damage electronic components.
- Wait until the device has acclimatised before putting it into service.

Temporary storage:
Also in case of an interim storage the device must be stored dry and within the specified ambient temperature range.
3.4 Conditions for the Installation Site

- Ambient temperature: 5 °C – 40 °C

**NOTICE**

**Ambient temperature**
Temperatures outside the permitted range

- Electronic and mechanical components may be damaged.
- The performance data alter to an unknown extent.

- **Do not exceed or fall below the permitted temperature range (5 °C to 40 °C ambient temperature) of the device.**

3.5 Installing the device

- Installation height: max. 2 000 m above sea level
3.6 Description of type plate

Fig. 1: Type plate

1  Device designation
2  Year of manufacture
3  Article number
4  Serial number
5  Manufacturer’s address
6  CE mark
7  Disposal sign
8  Barcode
9  Voltage
10 Supply frequency
11 Output
12 Current
13 Number of fuses
14 Fuse design and fuse rating
3.7 Compressed air required

A compressed air connection with at least 7.5 bar is required.

3.8 Electrical Connection

**WARNING**

**Risk to life caused by an electric shock**

Connection to socket without a protective earth conductor

- Connecting the device to sockets without a protective earth conductor can lead to life-threatening injuries caused by an electric shock.
- **Always operate the device using sockets with a protective earth conductor (PE).**

**NOTICE**

**Electrical connection**

Failure to observe the values on the type plate

- Electronic and mechanical components may be damaged.
- **Connect the device only to a mains supply matching the values on the type plate.**

**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.

- Check the type plate for details on the necessary voltage, frequency, and maximum external current source fuse for the device.
- The listed values must agree with the existing mains supply.
- Only use the supplied power cable to connect the device to the mains supply.

3.9 Transport

**WARNING**

**Risk of injury due to the device falling down**

Lifting the device above head height

- The device can fall causing serious injuries when lifted above head height.
- **Never lift the device above head height!**

**NOTICE**

**Damage to components**

Transport

- Mechanical or electronic components may be damaged during transport.
- **The device must not be knocked, shaken or thrown during transport.**
The device is secured to the transport pallet by means of four nuts.

- Use an SW 17 spanner to unscrew the four nuts.

**NOTICE**

**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.

### 3.10 Installing the device

- Place the device on a firm surface.

Please refer to the “Technical data” chapter for more parameters.
The device must be locked prior to commissioning.
3.11 Removing the transport lock

- The drive unit of the device is locked for transport.
- The two screws (ZS) must be removed before commissioning for the first time

Fig. 3: Accessing the transport lock
4 Technical Data

4.1 Use of the Device for the Intended Purpose

**CAUTION**

**Risk of injury**
Explosive or flammable samples

- Samples can explode or catch fire during the grinding process.
- **Do not use any samples in this device that carry a risk of explosion or fire.**
- **Take note of the safety data sheets for the sample material.**

**CAUTION**

**Risk of injury**
Potentially explosive atmosphere

- The device is not suitable for use in potentially explosive atmospheres. Operating the device in a potentially explosive atmosphere can lead to injuries caused by an explosion or fire.
- **Never operate the device in a potentially explosive atmosphere!**

**CAUTION**

**Risk of injury**
Sample material that is harmful to health

- Sample material that is harmful to health can injure people (illness, contamination).
- **Use suitable extraction systems with sample material that is harmful to health.**
- **Use suitable personal protective equipment with sample material that is harmful to health.**
- **Take note of the safety data sheets for the sample material.**

**Target group:** operating company, operator

**Designation of the machine type:** RS 300

The RS 300 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 innovative Cardan drive (3-dimensional grinding movement), the mill runs quietly and safely, even with heavy grinding sets.

The vibratory disc mill is deployed successfully in almost all areas of industry and research. This particularly applies to those with requirements regarding purity, speed, fineness and reproducibility.

Since the RS 300 achieves very high levels of final fineness in the shortest time, it is especially suited to preparing samples for spectral analysis.

Due to its strong design, the RS 300 has proven itself in the building materials sector (cement), in geology, mineralogy, metallurgy and in power stations.

Soil, concrete, electronic components, ores, glass, ceramic, coal, coke, corundum, metal oxides, minerals, parts of plants, slag, silicates, cement, cement clinker and many other substances can be ground easily, quickly and without loss.
Benefits
– Reproducible grinding results due to "Cardan drive" (grinding jar has 3-dimensional movement during grinding)
– Extremely short grinding time
– No sample loss thanks to optimal O-ring seal
– Large selection of materials for neutral-to-analysis grinding
– Closed, noise inhibiting grinding chamber
– Pneumatic clamping of grinding jars (automatic)

NOTICE

Range of application of the device
Long-term operation
– This laboratory device is designed for eight-hour single-shift operation with a duty cycle of 30%.
• This device may not be used as a production machine nor is it intended for continuous operation.

4.2 Grinding jar nominal volume

<table>
<thead>
<tr>
<th>Material</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardened steel</td>
<td>100 / 800 / 1000 / 2000 ml</td>
</tr>
<tr>
<td>Standard steel</td>
<td>100 / 800 / 1000 / 2000 ml</td>
</tr>
<tr>
<td>Stainless steel 1.4401</td>
<td>2000 ml</td>
</tr>
<tr>
<td>Silicon nitride</td>
<td>1000 ml</td>
</tr>
<tr>
<td>Tungsten carbide</td>
<td>100 ml</td>
</tr>
<tr>
<td>Zirconium oxide</td>
<td>100 ml</td>
</tr>
</tbody>
</table>

NOTICE

Wear or damage to the grinding set
Insufficient fill quantity
– Increased wear or damage to the grinding set is possible if the grinding set is operated with insufficient fill quantity.
– The grinding set must be filled to at least 1/3 of the nominal volume.

4.3 Feed size

The maximum feed size depends on the grinding jar volume and the hardness of the sample material.

Grinding set 100 ml = max. particle size < 10 mm
Grinding set 800 ml = max. particle size < 15 mm
Grinding set 1000 ml = max. particle size < 15 mm
Grinding set 2000 ml = max. particle size < 20 mm
4.4 Rated Power

2200 W
Make sure that the voltage and frequency of your mains connection match those on the type plate of the device. The mains connection must be fused to at least 16 A.

NOTICE

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.

4.5 Motor Rotation Speed

The speed is 912 revolutions/min

4.6 Emissions

CAUTION

Risk of injury caused by not hearing acoustic signals
Loud grinding noise
- Loud grinding noise may result in not hearing acoustic warning signals, leading to injuries.
- Take the volume of grinding noise into consideration when designing the acoustic signals in the working environment.
- Where necessary, use additional visual signals.

4.6.1 Noise levels

Noise measurement in accordance with DIN 45635-31-01-KL3
The noise levels are mainly influenced by the machine speed, the material being ground and the grinding set.

Workplace-related emissions value $L_{P\text{eq}} = \text{up to 76 dB(A)}$
Sound power level $L_{WA} = 99 \text{ dB(A)}$

Conditions for measurement:
Grinding set: 2000 ml steel with grinding disc
Sample material: 1500 g cement clinker, particle size <25 mm
Sound level meter: Brüel & Kjaer 2237 Controller

4.6.2 Position of the user

The position of the user for normal operation is in front of the door, level with the display and the emergency stop device.
4.7 Degree of Protection

- IP40

4.8 Protective Equipment

The device is fitted with a safety mechanism that prevents the device being started in an unsafe state.
- The device can only be started when the lid is closed.
- The lid can only be opened when the device has come to a halt.
- The device can only be started if there is sufficient air pressure (at least 7.5 bar).
- If the air pressure drops below the minimum level during grinding, the device is automatically switched off.

4.9 Dimensions and Weight

Height: up to approx. 1420 mm / width: 1150 mm / depth: up to approx. 800 mm

Weight: RS 300 net approx. 315 kg

4.10 Required Floor Space

Height (cover open): 2100 mm / width: 1150 mm / depth: 800 mm;
5  Installation drawing

RS 300 construction size
6 Operating the Device

6.1 Views of the Instrument

Fig. 4: Front view of the device
Fig. 5: Close-up of the grinding chamber

6.2 Summary table of device parts

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Cover</td>
<td>Closes the grinding chamber</td>
</tr>
<tr>
<td>B</td>
<td>Damper for cover</td>
<td>Secures cover when open</td>
</tr>
<tr>
<td>H</td>
<td>Clamping unit for grinding jars</td>
<td>Clamps grinding jar on the support</td>
</tr>
<tr>
<td>I</td>
<td>Support for grinding jars</td>
<td>Support for grinding jar and centring aid</td>
</tr>
<tr>
<td>J</td>
<td>Emergency stop button</td>
<td>When pressed the machine is switched off immediately</td>
</tr>
<tr>
<td>K</td>
<td>Pin closing mechanism</td>
<td>Safety lock for the cover</td>
</tr>
<tr>
<td>L</td>
<td>Control panel</td>
<td>Controls the device</td>
</tr>
<tr>
<td>M</td>
<td>Closing mechanism</td>
<td>Support for the pin closing mechanism</td>
</tr>
<tr>
<td>N</td>
<td>Bellows cylinder</td>
<td>Cylinder for pneumatic clamping of grinding jars</td>
</tr>
<tr>
<td>O</td>
<td>Main on/off switch</td>
<td>When turned the machine is switched on/off</td>
</tr>
<tr>
<td>P</td>
<td>Clamping block</td>
<td>Automatically clamps the grinding jar</td>
</tr>
</tbody>
</table>
6.3 Views of control elements and the display

Fig. 6: View of the control panel

6.4 Summary table of the control elements and the display

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Control knob</td>
<td>Operates device settings</td>
</tr>
<tr>
<td>G</td>
<td>Button for opening the cover</td>
<td>Unlocks the cover</td>
</tr>
<tr>
<td>C</td>
<td>Display</td>
<td>Displays the control functions and parameters</td>
</tr>
</tbody>
</table>

6.5 Opening the device

The following steps are required to be able to insert and clamp the grinding jar.
- Connect the device to the power supply.
- Switch the main switch on the front on.
- Press button F3 (open lid).

The safety lock opens, and the lid can be flipped open.

6.6 Closing the device

It is only possible to look the grinding chamber when the device is connected to the power supply and the main switch is switched on.
- Close the lid on the housing.
- A sensor detects the closing pin on the housing lid.
- The housing lid can be locked using the controls.
6.7 Emergency Unlocking

**CAUTION**

Risk of injuries
Drive coasting

- In the event of a power failure, the drive on the device continues to coast for a long time, as does the drive on connected device parts. After activating the emergency release, items of clothing and parts of the body can get caught in moving components of the device. This can result in substantial injuries.

- Disconnect the device from the power supply before activating the emergency release.
- Wait until all parts of the device have stopped moving.

---

**Fig. 7:** RS 300 front panel

**Fig. 8:** Key in the electronics assembly

On delivery, a key is supplied with the device in the electronics assembly (right-hand side of the machine), using which the device can be opened manually in the event of a power failure.

- Remove the cap (AK).
- Place the key (SN) into the opening (NR).

The key must be pressed into the device to unlock the gear drive.
Operating the Device

Fig. 9: Emergency release procedure

- Turn the key (SN) anticlockwise as far as it will go.
  - The lock is opened, and the cover can be opened.
  - The lock must be set to “lock” again in order to restart the machine.

6.8 Inserting the Grinding Jar

NOTICE

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.

6.8.1 Grinding jars

Fig. 10: Image of a grinding jar

A Retsch grinding set with volumes of 100 / 800 / 1000 and 2000 ml and standard steel / hardened steel / stainless steel / tungsten carbide / silicon nitride and zirconium oxide materials can be used in the RS 300.

Adapter rings are needed for the volumes 100 / 800 and 1000 ml.
6.8.2 Grinding disc

A grinding disc may also be inserted into the RS 300:
• Fit the grinding disc to the RS 300
• Fill the grinding material into the space (RZ) between the grinding jar wall (MW) and the inner grinding piece (RE).

6.9 Preparing the grinding process

For the grinding jar only:
Fit one disc and one ring in the grinding jar.
• Position the ring and the disc as shown in the diagram.

• Fill the material to be ground into the space (RZ) between the grinding chamber wall (MW) and the inner ring (RE).
  – For an ideal grinding result, the area (RS) between the inner ring (RE) and disc (SC) must be left empty.
Operating the Device

**Fig. 13:** Filling area of the grinding jar

**For the grinding jar and grinding disc:**
- Remove the residues of ground 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 jar/grinding disc with the lid.
- Slide the grinding jar/grinding disc into the support.

**Fig. 14:** Inserting the grinding jar

Centre the grinding set in the grinding jar support (MA).

**Fig. 15:** Centred grinding jar
• Using gentle movements as necessary, allow the grinding set to slide into the support (*Fig. with optional Autolifter)

Fig. 16: Clamp the grinding set

• The grinding set is automatically clamped at the start of the grinding process.

**CAUTION**

**Risks of burns and scalding**
Hot grinding jar and/or sample material

– The sample material and grinding jar can get very hot during the grinding process.
– **After grinding, always wear protective gloves when handling the grinding jar.**
– **Never open hot grinding jars!**
– **Allow grinding jars to cool down to room temperature before opening them.**

The grinding jar clamping mechanism consists of a bellows cylinder that is automatically filled with air before the start of the grinding process, thereby clamping the grinding set.

Please bear in mind that this device involves grinding apparatus with very high input of energy into the sample material.
– The device can only be started when the grinding set has been clamped.
– If the clamping comes loose due to insufficient air pressure during grinding, the device will switch off automatically
6.10 Optional autolifter for removing heaving grinding sets

The autolifter is attached by a bracket on the side of the machine and supplied with air.
Using the buttons shown in the image, the support tool can be moved upwards or downwards. This enables the grinding jar to be placed effortlessly and ergonomically into the mill and to be removed from the mill again.
The Autolifter can be adjusted to the volumes specified above with the help of small adapter pieces.
The Autolifter is available for volume sizes of 800 / 1000 / 2000 ml.

6.11 Display – operating the device

Start screen – press the desired function key.

Select one of the following:
F1: Manual Mode (grinding is started and stopped manually by the user. The grinding time can be read off on the display)
F2: Automatic Mode (grinding is started manually for a previously programmed grinding time and then stopped automatically)
F3: Lock / Unlock

Manual Mode
Select F1 to go to the manual mode settings.
The screen then displays the following functions:

**Fig. 19: Options menu**

- **Runtime** (duration of the grinding process)
- **Reversal** (reversal of the direction of rotation)
  - F1: Start
  - F2: Stop
  - F3: Reversal ON / Off
  - F4: Back

The reversal mode is activated (ON) and deactivated (OFF) by pressing button F3.

Pressing button F1 starts the grinding process and the time display shows the current grinding time. The grinding process is only stopped after pressing button F2. Button F4 takes you back to the start options.

**Automatic Mode**
Select F2 in the start screen to go to the settings for automatic mode.

The screen then displays the following functions:

**Fig. 20: Options menu for automatic mode**

On pressing button F3, the following window should open:
Fig. 21: Options menu 1/3

Settings menu 1/3
Runtime (desired runtime)
F1: Increase runtime
F2: Decrease runtime
F3: Options menu in minutes or seconds
F4: Next window

After setting the desired grinding time (maximum of 59 minutes and 59 seconds), press button F4 to go to the next options menu.

Fig. 22: Options menu 2/3

Interval time
F1: Interval time / increase interval time
F2: Interval time / reduce interval time
F3: Select minutes / seconds
F4: Next

Pressing button F4 takes you to the last options menu.

Fig. 23: Options menu 3/3 (reversal: OFF)

Using button F1 here enables you to switch the direction reversal on / off.
By pressing the F4 button you confirm all settings and go back to the options menu where you can start the grinding process by pressing button F1 “Start”.
6.12 Error messages

Error messages appear on the control panel of the machine if it is not possible for the machine to start.

The following error message appears if the emergency stop has been activated or it is necessary to open and close the cover again:

![Fig. 24: Emergency stop activated](image)

The following error message appears if the lock is open:

![Fig. 25: Lock open](image)

The following error message appears in manual or automatic mode if it is not possible for the machine to start for the above reasons:

![Fig. 26: Check safety](image)
7 Cleaning, Wear and Maintenance

**WARNING**

Risk to life caused by an electric shock
Cleaning live parts with water
  - Cleaning the device with water can lead to life-threatening injuries caused by an electric shock if the device has not been disconnected from the power supply.
  - Only carry out cleaning work on the device when it has been disconnected from the power supply.
  - Use a cloth moistened with water for cleaning.
  - Do not clean the device under running water!

**WARNING** The device must always be switched off and disconnected from the mains before accessing it for cleaning or servicing purposes.
7.1 Lubrication

The drive of the vibratory disc mill has 6 lubrication points (PS) which must be lubricated regularly after 150 hours of operation.

Use a natural coloured, lithium soap grease (graphite free) such as Shell Gadus S2 V220 2 or BP Energrease LS-EP 2.

Fig. 27: Position of lubrication points
### 7.2 Maintenance

**WARNING**

**Risk of loss of life due to an electric shock**

High voltage due to capacitor discharge

- Due to the capacitor discharge on the frequency converter, the device conducts voltage for up to **3 minutes** after the mains plug has been removed.
- You could touch live contacts when the device is open. An electric shock can cause serious injuries in the form of burns and cardiac arrhythmia, respiratory failure or cardiac arrest.

- **Wait 3 minutes after removing the power cable before opening the device.**

---

**Fig. 28**: Removing the cover

**Fig. 29**: Key

- Using the key supplied, release the locks (VE) shown in the image.
- Remove the cover.

---

**NOTICE**

- The top and bottom of the springs must be checked every 200 operating hours for wear and tear or brittleness.
- A forklift or similar is needed when replacing the spring in order to lift the top platform.
Fig. 30: Positions of rubber springs

NOTICE

- Check the filter element (B) on the filter regulator every 2 weeks. Drain any condensate present into a separate container and then close the container.
- Replace the filter system (B) every 2 years or when the pressure drop reaches 0.1 MPa in order to prevent damage to the filter element.

Abb. 31: Filter regulator
7.3 Parts subject to wear and tear

Fig. 32: Springs and locking sleeve for spring

- Replace the springs (FE) and sleeves (AH) after approx. 500 operating hours. (Both components should always be replaced together)
  - Order No. 03.181.0148 (spring) / 03.265.0148 (locking sleeve)

Fig. 33: Platform insert made of PU for grinding jar

- Replace the platform insert (MA) after approx. 300 operating hours.
  - Order No. 03.143.0071

Fig. 34: Bellows cylinder

- Replace the bellows cylinder (AB) after approx. 200 operating hours.
- Block the supply of compressed air when not using the machine for a long period to extend the service life of all sealing elements.
  - Order No. 03.381.0010
7.4 Return for Service and Maintenance

The acceptance of devices and accessories of the Retsch GmbH for repair, maintenance or calibration can only be effected, if the return form including the decontamination declaration service has been correctly and fully completed.

- Download the return form located in the download section "Miscellaneous" on the Retsch GmbH homepage (http://www.retsch.com/downloads/miscellaneous/).
- When returning a device, attach the return form to the outside of the packaging.

In order to eliminate any health risk to the service technicians, Retsch GmbH reserves the right to refuse the acceptance and to return the respective delivery at the expense of the sender.
8 Disposal

In the case of a disposal, the respective statutory requirements must be observed. In the following, information on the disposal of electrical and electronic devices in the European Community are given.

Within the European Community the disposal of electrically operated devices is regulated by national provisions that are based on the EU Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE).

Accordingly, all devices supplied after August 13th 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, the devices are provided with the disposal label.

Since the disposal regulations worldwide and also within the EU may differ from country to country, the supplier of the device should be consulted directly in case of need.

This labelling obligation is applied in Germany since March 23rd 2006. From this date on, the manufacturer must provide an adequate possibility of returning all devices delivered since August 13th 2005. For all devices delivered before August 13th 2005 the end user is responsible for the proper disposal.
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EU Declaration of Conformity

VIBRATORY DISC MILL
RS 300 | 21.101.xxxx

EU DECLARATION OF CONFORMITY
Herewith we declare, represented by the signatory, that the above mentioned device complies with the
following directives and harmonized standards:

Machinery Directive 2006/42/EC
Applied standards, in particular:
DIN EN ISO 12100 Safety of machinery

EMC Directive 2014/30/EU
Applied standards, in particular:
DIN EN 55011 Industrial, scientific and medical equipment – Radio-frequency disturbance
characteristics – Limits and methods of measurement

Low Voltage Directive 2014/35/EU
Applied standards, in particular:
DIN EN 61010-1 Safety requirements for electrical equipment for measurement, control and
laboratory use

Authorized person for the compilation of technical documents:
Dr.-Ing. Frank Janetta (Senior Development Manager)

Furthermore, we declare that the relevant technical documentation for the above mentioned device has been compiled according to Annex VII Part A of the Machinery Directive, and we undertake to submit this documentation on request to the market surveillance authorities.

In case of a modification to the device not previously agreed with us as well as the use of not licensed spare and accessories this certificate will lose its validity.

Retsch GmbH

Haan, 10/2018

Dr. Alexander Mühlig, Technical Director