
Manual

Knife Mill GM 300



Translation



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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

In this Operating Manual we give you the following safety warnings

Serious injury may result from failing to heed these safety warnings. We give you the following warnings and corresponding content.

 **WARNING**

Type of danger / personal injury

Source of danger

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

We also use the following signal word box in the text or in the instructions on action to be taken:

 **WARNING**

Moderate or mild injury may result from failing to heed these safety warnings. We give you the following warnings and corresponding content.

 **CAUTION**

Type of danger / personal injury

Source of danger

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

We also use the following signal word box in the text or in the instructions on action to be taken:

 **CAUTION**

In the event of possible **property damage** we inform you with the word “Instructions” and the corresponding content.

NOTICE

Nature of the property damage

Source of property damage

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

We also use the following signal word in the text or in the instructions on action to be taken:

NOTICE

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:

2 Confirmation

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

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

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.**
-

3.2 Transport

NOTICE

Transport

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

3.3 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.**
-

3.4 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).**
-

Atmospheric humidity:

Maximum relative humidity 80% at temperatures up to 31°C, decreasing linearly up to 50% relative humidity at 40°C

*NOTICE***Atmospheric humidity**

- Electronic and mechanical components may be damaged and the performance data alter to an unknown extent.
 - **Do not exceed the admissible range for atmospheric humidity.**
-

3.5 Removing the Transportation Lock

Remove the cardboard cross, which serves to protect the knives during transport), from the inside of the grinding jar.

3.6 Installation of the Device

Installation height: maximum 2000 m above sea level

*NOTICE***Installation of the machine**

- It must be possible to disconnect the machine from the mains at any time.
 - **Install the machine such that the connection for the mains cable is easily accessible.**
-

3.7 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.

3.8 Type Plate Description

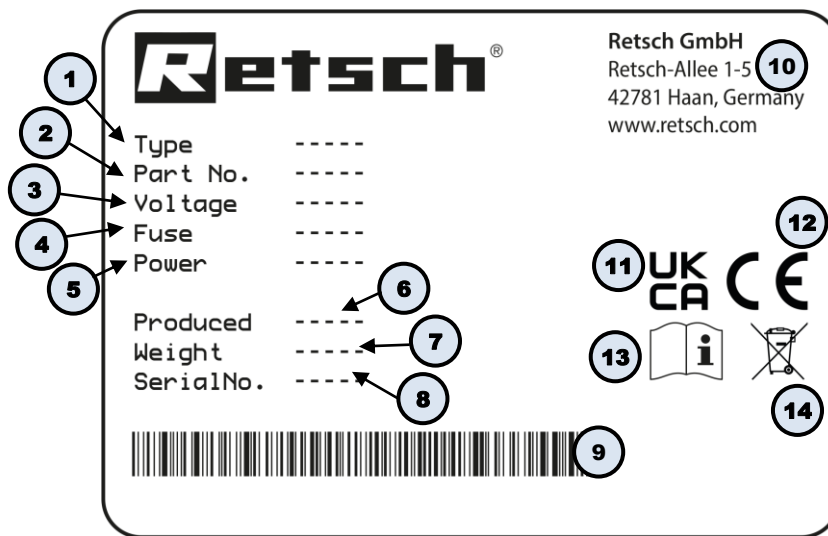


Fig. 1: Type plate

- 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.

4 Technical Data

4.1 Use of the Device for the Intended Purpose

Target group: Operators

Machine type designation: GM 300

The GRINDOMIX GM 300 laboratory knife mill serves to mill, homogenise and mix soft to medium-hard, aqueous, fatty, fibrous and dry materials within seconds so that they will be suitable for analysis.

It can process sample volumes of up to 4.5 litres quickly and reproducibly.

The GRINDOMIX GM 300 is designed for quantities up to approx. 4500 ml, large volume materials up to 1000 ml. The feed size is < 130 mm.

It is particularly engineered to cut up the following materials:

fish, meat, vegetables, cheese, fodder pellets, seeds, bacon, sausage, dry bakery products and pasta, all products with high water, fat and fibrous content and similar materials.

The GRINDOMIX GM 300 meets the special laboratory and analysis requirements and in its range of performance it far outstrips that of commercially available household mixers.

Our applications laboratory will be happy to give you more information.

- Fast and gentle size reduction and homogenisation of food
- Speed selectable from 500 - 4,000 rpm
- Powerful 1.5 KW industrial motor
- Easy changing and cleaning of the grinding tools
- Interval operation and reverse mode possible
- Mode for preliminary size reduction and fine size reduction
- Digital parameter preselection
- 10 parameter combinations can be stored

NOTICE

N1.0007

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 Protective Equipment

Manual access into the GRINDOMIX GM300 grinding chamber is prevented by an electromechanical locking device.

The device can be started only if the housing cover is closed and can be opened only if the motor has stopped completely.

The actual speed is displayed during operation.

The safety device checks that the grinding jar and cover are in place before the grinding process can be started.

If the speed deviates by more than 15 %, the device will switch off automatically.

4.3 Emissions

⚠ CAUTION

C1.0044

Hearing damage

A high sound level may be generated depending on the type of material, the grinding set used, the grinding frequency set and the duration of the grinding

- Excessive noise in terms of level and duration can cause impairments or permanent damage to hearing.
- **Ensure that suitable noise protection measures are taken, or wear ear protection.**



⚠ CAUTION

C.0020

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.**

Noise characteristics:

The noise is measured in conformance to DIN 45635-031-01-KL3.

The noise characteristics are influenced by the properties of the material being ground.

Example 1):

Sound-power level LWA = 93.5 dB (A)

Workplace-related emissions level Lp Aeq = 78.7 dB (A)

Operating conditions:

Container = plastic container with cover

Grinding organ = stainless steel knives

Feed material = quartz sand

Feed volume = 2.5 l

Speed = 3000 min⁻¹

4.4 Degree of Protection

Grinding chamber and keyboard IP45

In the area of the ventilation slots IP20

4.5 Drive

3-phase asynchronous motor with frequency converter

4.6 Rated Power

Continuous duty 1.5 KW, peak performance 3 kW

4.7 Rated voltage

- 220 - 230 V → 50 / 60Hz ± 0,1Hz

4.8 Speed

The knife speed can be set in 100-rpm steps from 500 to 4000 rpm.

4.9 Electromagnetic Compatibility (EMC)

- EMC class in accordance with DIN EN 55011: B

4.10 Dimensions and Weight

4.10.1 Height with Hood Cover Closed

Height: 340 mm

Width: 440 mm

Depth: 440 mm

4.10.2 Height with Hood Cover Open

Height: 700 mm

Width: 440 mm

Depth: 430 mm

4.10.3 Weight

approx. 30 kg

4.11 Required Floor Space

440 mm x 440 mm; no safety margins required

5 Operating the Device

5.1 Views of the device

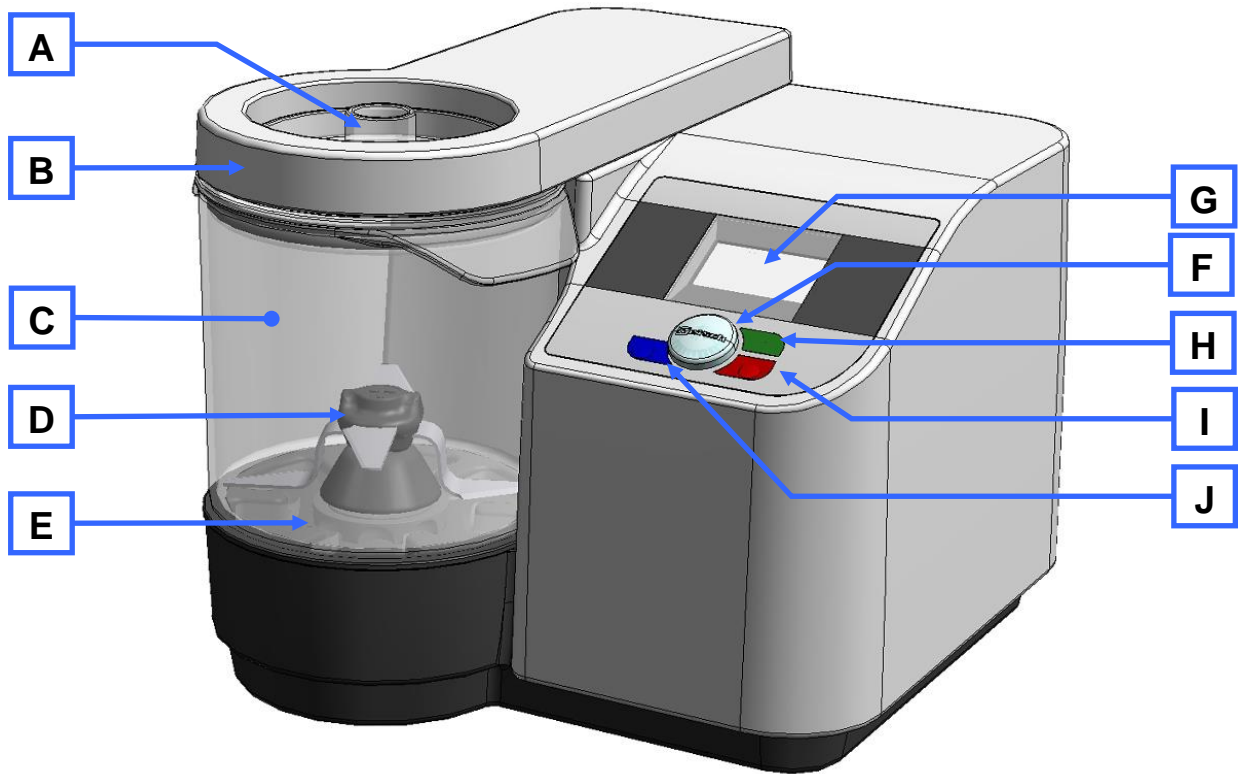


Fig. 2: Front view

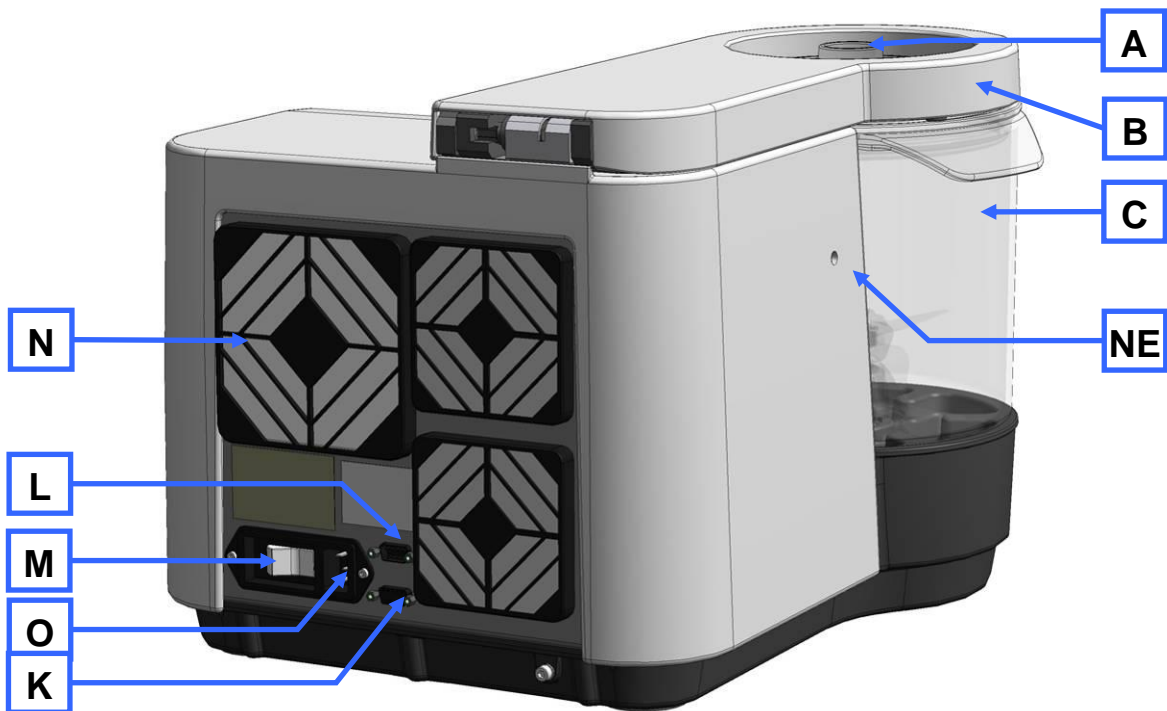


Fig. 3: Rear view

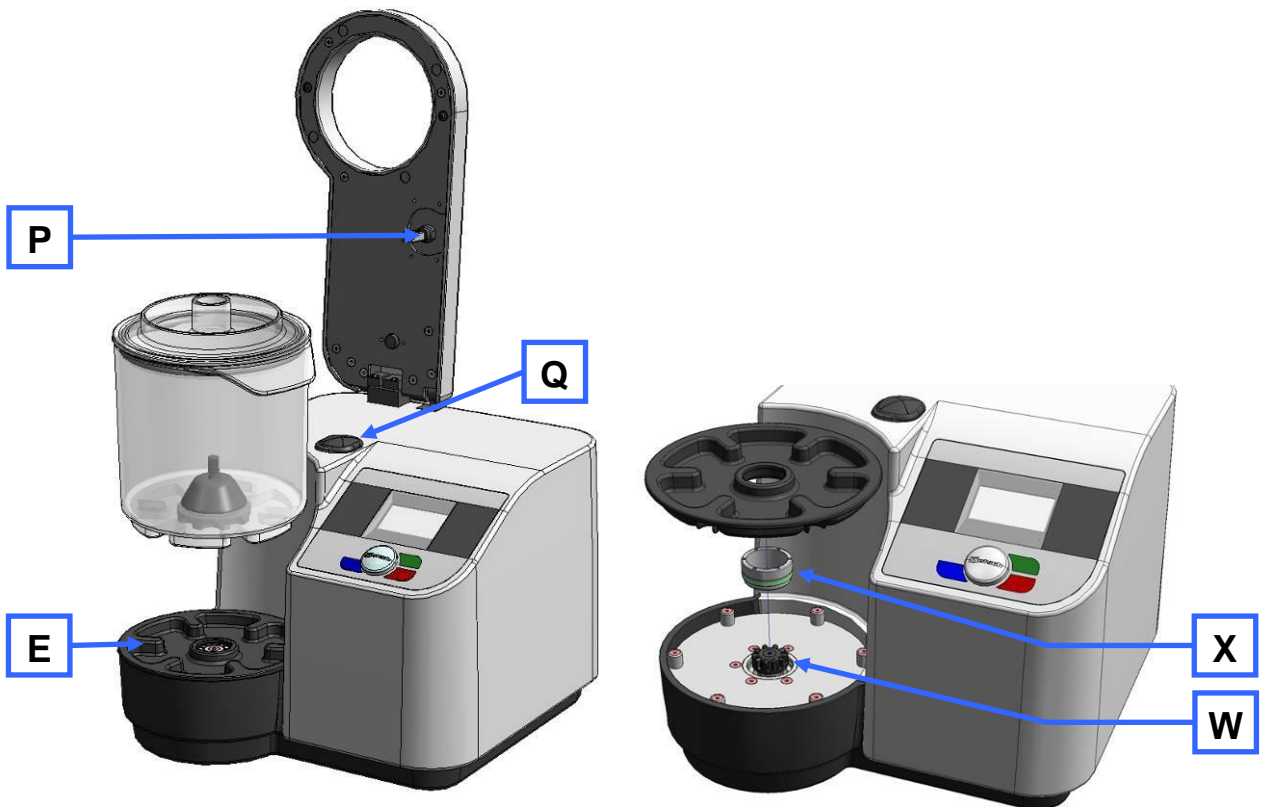


Fig. 4: Detailed views of housing

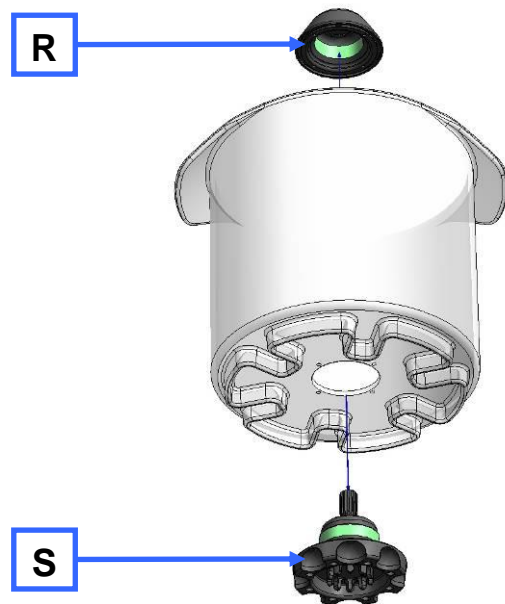


Fig. 5: Detail of grinding jar disassembly

5.2 Operating elements and displays

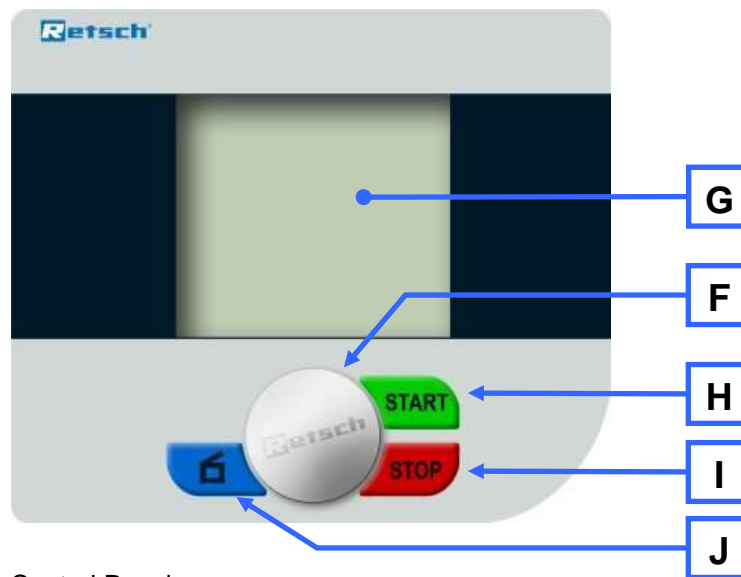


Fig. 6: Graphical View of the Control Panel


5.3 Overview table of the parts of the device

Element	Description	Function
A	Grinding jar cover	Closes the grinding chamber
B	Flap	Prevents interference with the grinding chamber
C	Grinding chamber	Accommodates the sample material
D	Knife	Grinds the sample material
E	Jar holder (base frame)	Accommodates the grinding jar
F	Control knob	To adjust the device
G	Display window	To check settings and operating conditions
H	START button	To start the grinding process
I	STOP button	To stop the grinding process
J	Button to open the flap	Releases the flap lock
K	Not assigned	No function
L	Serial port	Software update and service
M	On/off button	Disconnects device from the power supply
N	Housing fan	Cools the drive
O	Electrical connection	IEC connector
P	Tightening	Is held by the electromechanical interlock
Q	Seal of tightening	Prevents penetration of dirt
R	Cone dome	Seals the knife bearing
S	Bearing flange	Supports the knife shaft
W	Centring ring	Guides the coupler
X	Coupler	Connects bearing flange and drive

5.4 Switching On and Off

- Switch on the mill by pressing the ON/OFF switch (**M**) at the back.
When the GM300 is switched on for the first time, the language menu is displayed.
You can select your national language here by turning the operating knob (**G**). Pressing this knob confirms the selection and the display shows "Open Lid".

5.5 Opening and Closing of the Device

- Press the (J) key. 

The electromagnetic safety interlock opens and the flap can be folded back. The grinding jar is now freely accessible.

NOTE

After the interruption or end of a grinding process, the flap must be opened once.

Closing the grinding chamber is only possible if the GM300 is connected to the power supply and the main switch on the back of the device is switched on.

- Shut the housing lid (**B**) and press it downwards until the lid closure is activated .
A sensor detects the closure of the housing lid and the motor-driven lid closure is switched on. The housing lid is closed automatically.

5.6 Handling the Knife



CAUTION

Injuries in the form of cuts

Sharp knife blades

- The knife blades are very sharp and if handled incorrectly, they can lead to injuries in the form of cuts.
- **Touch the knife only at the recessed grips.**
- **Do not reach into the grinding jar as long as sample material is covering the knife.**
- **Only reach into the grinding jar if it is outside the mill.**
- **Before taking out the knife, remove the sample material until the recessed grips are free. Use a scraper or shake off the material.**

NOTE

Insert the knife before feeding the material to be ground; otherwise, the material to be cut up can settle between the knife and the driving shaft.

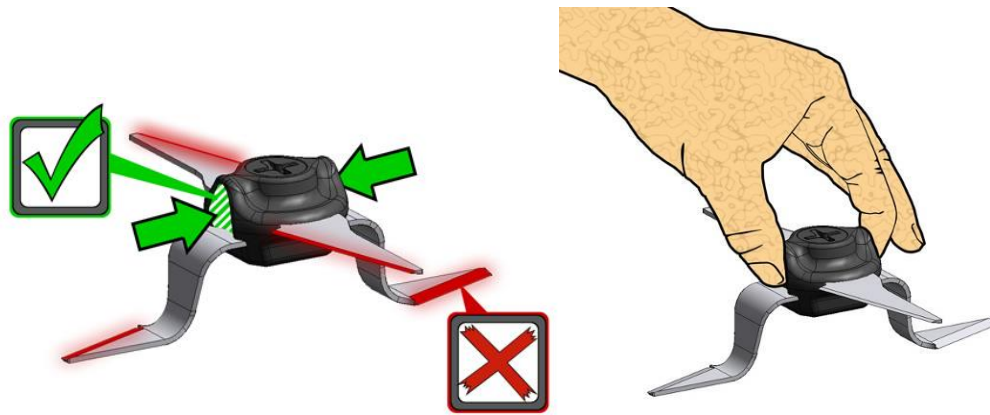


Fig. 7: Recessed grips on the knife

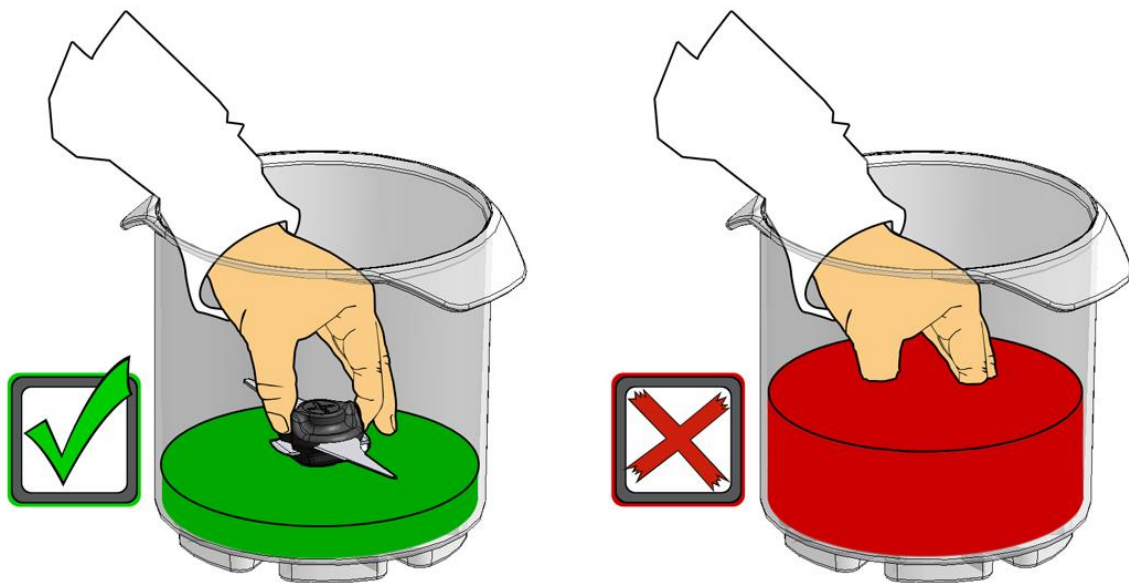


Fig. 8: Removing the knife– Fill level of the grinding jar

Note that the knife must be inserted before filling the grinding jar. The knife is placed on the shaft and held by magnetic force .

The sealing lip (**DL**) of the V ring seal (**V**) must point downwards when inserted. (See Fig. for knife assembly)

NOTICE

- Remove the knife after the grinding process.
- Do not leave the knife in the sample material!
- Clean the knife after grinding and then dry carefully.

CAUTION

If the bottom, bent blade of the knife is so deformed that it touches the inside of the jar it must be replaced immediately.

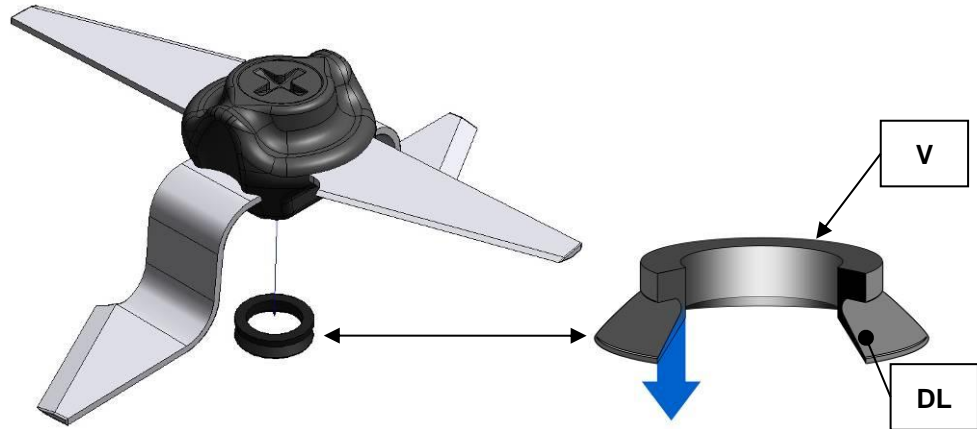


Fig. 9: Inserting the sealing ring

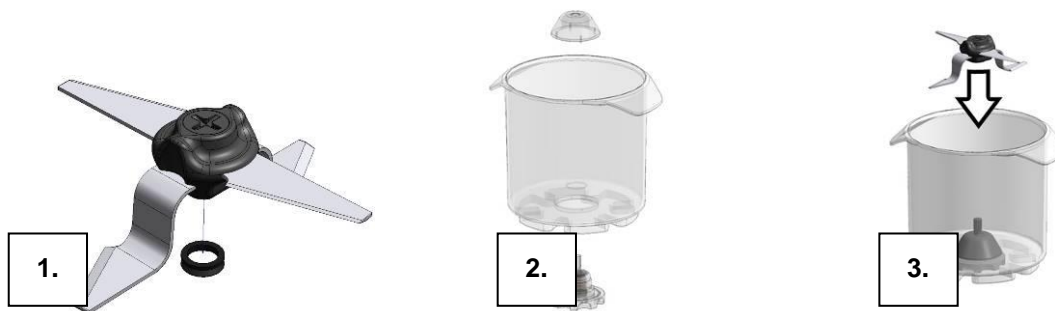


Fig. 10: Preparing the knife and grinding jar, inserting the knife

NOTE

- Check the state of the V-ring seal (**V**) regularly.
 - The bottom edge of the lip seal (**DL**) must be clean and smooth.
 - Replace the V-ring seal when the lip seal is brittle, cracked, frayed or damaged in order to prevent rust and damage to the cutter bearing.
- (V-ring seal part number: **05.111.0243**)

5.7 Inserting the Grinding Jar

CAUTION

When grinding with dry ice(CO₂), give consideration to the quantity of dry ice used and the volume of gas that will develop accordingly.

The grinding jar lids have varying ventilation characteristics and can be pressed upwards by the large volume of the generated gas.

CAUTION

Scalding/burns

Hot grinding jar

- Depending on the grinding process, the material being ground and accordingly the grinding jar can become very hot.
- **Wear appropriate protection always when touching the grinding jar if it is hot.**
- **Never open hot grinding jars! Allow the grinding jars to cool down to room temperature before opening.**

1. Assemble the knife.
2. Use the face spanner (**SL**) to mount the knife dome and the bearing flange in the grinding jar. (see diagram below)

NOTE

Before inserting the grinding jar, it is essential to ensure that the bearing flange and the knife dome are positioned securely. If necessary, tighten the bearing flange with the face spanner (**SL**).

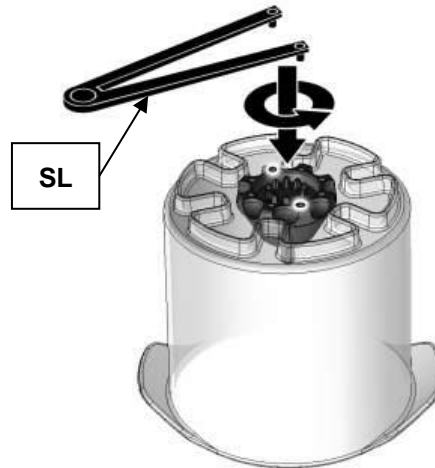


Fig. 11: Use a face spanner to remove the knife dome

3. Put the knife in the grinding jar on the knife dome and let the knife lock into place.
4. Fill the grinding jar with the sample to be ground. Depending on the material, the filling level may be as high as up to 2 cm under the edge of jar.

CAUTION

Note that some materials may increase knife wear, damage the knife or damage the jar.

The knife must not be reground.

CAUTION

If the sample to be ground is dry, use a steel grinding jar. Dry grinding stock can become very hot and damage the PVC grinding jar.

5. Put the lid onto the grinding jar, with one or two sealing rings depending on the material.
6. Insert the grinding jar with knife, grinding stock and lid into the device.
7. Close the flap on the device.
8. Make sure the grinding jar engages with the correspondingly shaped projections.

NOTE

Protect the grinding jar from continuous exposure to sunlight or UV irradiation. The PC jar is not infinitely UV-resistant.



Fig. 12: Inserting the grinding jar and closing the device.

5.7.1 Grinding container - use with different materials

The material properties specified refer to samples from the main area of applications: food or animal fodder

The **plastic** grinding container is **less** suitable for dry, tough or fibrous samples. **Stainless steel** is recommended for these samples as well as all others from the specified field of applications.

CAUTION

Please consult the manufacturer before using organic solvents!

NOTICE

Always grind hard materials in **stainless steel** grinding container and use the reverse mode, i.e. counter-clockwise direction of rotation (beating)!

Never use **plastic** grinding container, which have stress cracking! These must be replaced immediately!

5.8 Grinding Jar Lid Sealing Rings

The grinding jar cover is supplied as standard with a sealing ring inserted in the upper groove. When grinding dusty or very watery sample material, you can insert the second supplied sealing ring into the grinding jar cover. This prevents sample material escaping.

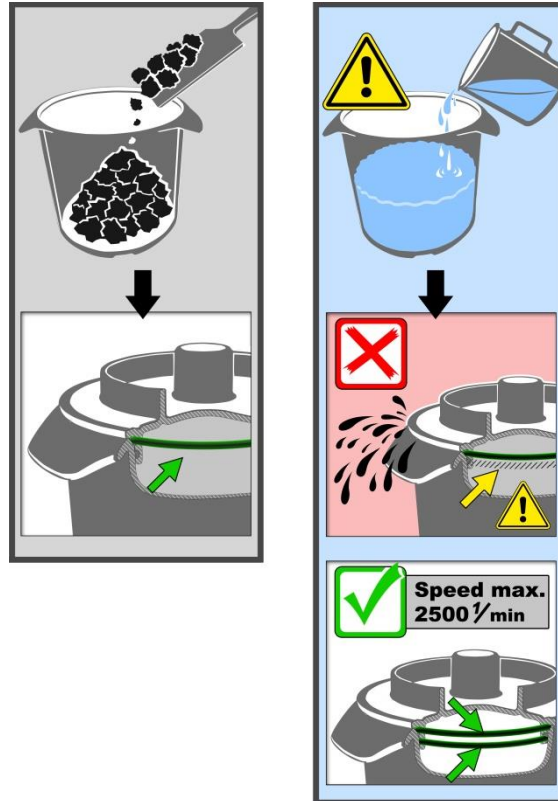


Fig. 13: Use of one or two sealing rings

NOTE

Thin fluid samples should be started at a low speed. Increase the speed gradually. The maximum speed for liquid samples may not exceed 2,500 revolutions per minute.

5.9 Starting the grinding process

- Set the desired grinding parameters.
- Insert the grinding jar with sample material, blade and lid.
- Close the flap until the electromechanical safety lock is closed.
- Press the START button (H).

NOTICE

With thin fluid samples, start at a low speed. Increase the speed slowly. The maximum speed for liquid samples is just 2500 revolutions per minute.



Fig. 14: Maximum speed with thin fluid samples

5.10 Interrupting and continuing the grinding process

- Press the STOP (I) key.
The grinding process is interrupted or stopped.

5.11 Stopping the grinding process

Interrupting the Grinding Process (Pause)

- Press the STOP key (I) once.
The grinding process is interrupted.

Stopping the Grinding Process (End)

- Press the STOP key (I) twice.
The grinding process is stopped (end).
The grinding parameters are reset to the previously set or stored values.

6 Display and operation

6.1 Symbols in the Display Unit

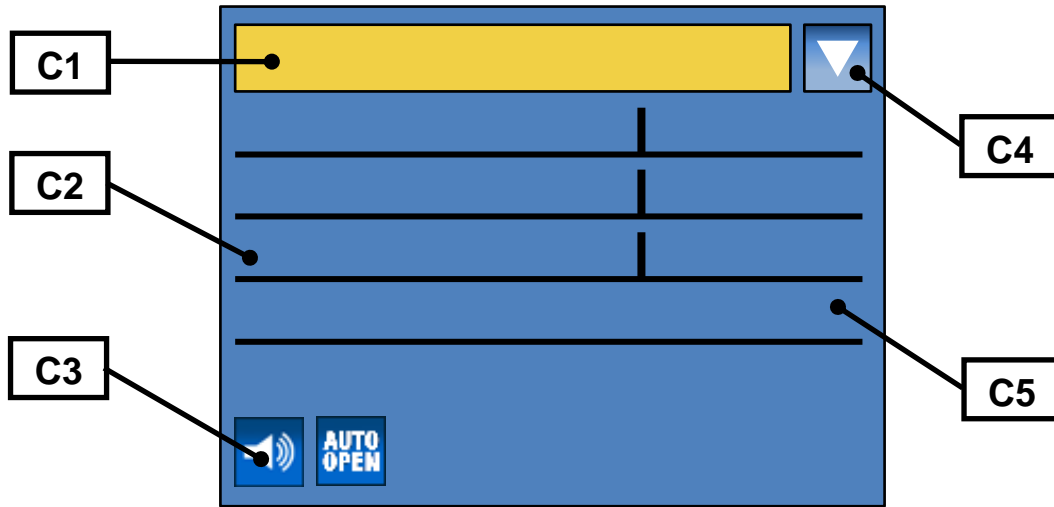


Fig. 1: View of the menu on the display unit

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 function statuses of sound, automatic opening and grinding jar 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
	Direction reversal switched on
	Direction reversal switched off
°C	Motor or frequency converter too hot
Power	Grinding output display
	Acoustic warning signal on
	Acoustic warning signal off
	Scrolling upwards or downwards possible
	Only scrolling upwards possible
	Only scrolling downwards possible
	Direction of rotation clockwise (cutting)
	Direction of rotation anti-clockwise (beating)

6.2 Display unit – operation of the device

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.

6.2.1 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)

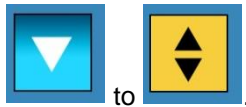
- Press the operating button to confirm settings.

Press III)

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

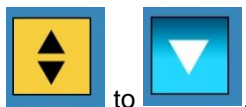
6.2.2 Navigating between operating modes

- 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.

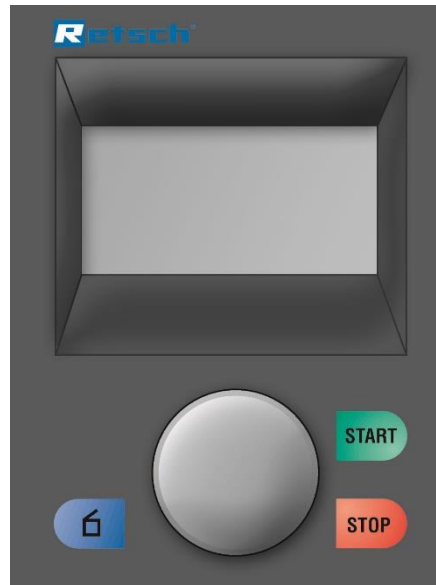
- The icon for the scrolling direction (**C4**) changes from



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

6.3 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.

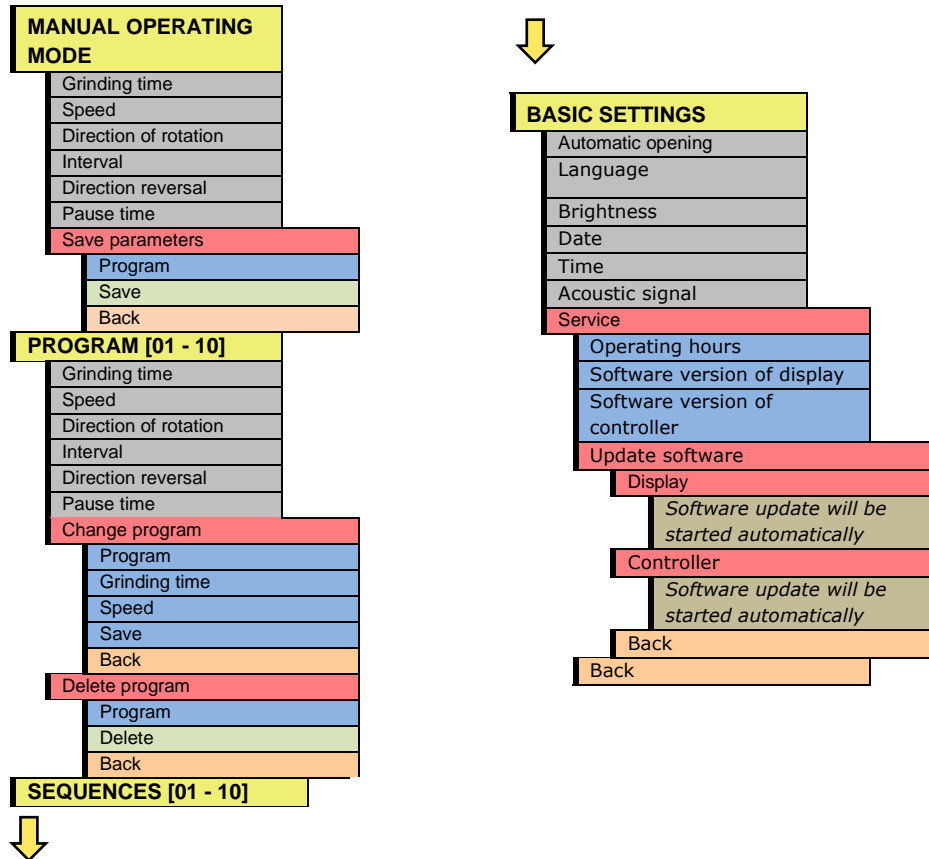


- Switch the device off at the main switch.
 - Switch the device on while simultaneously pressing the buttons **START - STOP – Open hood**.
 - After selecting the correct language, switch the device off and then immediately back on.
- Confirm your selection by pressing the operating button.

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

6.4 Menu structure

Complete overview of all menu items:



6.5 Operating modes

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

6.5.1 Manual operation

When this function has been set you can access and change all parameters and functions at any time. This is also possible in part during grinding.

6.5.2 Program 01 to 10

The previously set parameters for grinding time, interval, direction reversal, pause time and speed can be saved in a memory using the programs 01 to 10.

6.5.3 Sequences 01 to 10

The previously set programs can be processed in turn in sequences 01 to 10.

Sequence 1	Program 1
Sequence 2	Program 1+2
Sequence 3	Program 1+2+3
Sequence 4	Program 1+2+3+4
Sequence 5	Program 1+2+3+4+5
Sequence 6	Program 1+2+3+4+5+6
Sequence 7	Program 1+2+3+4+5+6+7
Sequence 8	Program 1+2+3+4+5+6+7+8
Sequence 9	Program 1+2+3+4+5+6+7+8+9
Sequence 10	Program 1+2+3+4+5+6+7+8+9+10

6.5.4 Basic settings

You can set the following device settings in this settings menu:

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

6.6 Manual Mode

6.6.1 Grinding time

The device is started with the preselected grinding time and at the last used speed. A direction reversal with pause time is not switched on.

6.6.2 Speed

You can adjust the speed in this menu.

500 to 4000 revolutions per minute

The device is started with the preselected grinding time and at the preselected speed. A direction reversal with pause time is not switched on.

6.6.3 Direction of rotation

- Select the direction of rotation for your materials.
 - Clockwise rotation (cutting).
 - soft, aqueous, fatty and fibrous materials.
 - Anti-clockwise rotation (beating).
 - hard, medium hard and dry materials.

The device is started with the preselected grinding time, speed, direction reversal and direction of rotation. The machine rotates with the set direction of rotation in one direction and can be set to clockwise or anti-clockwise rotation.

6.6.4 Interval

The interval time can be set here according to the grinding time. If not interval has been set, no direction reversal can be set.

6.6.5 Direction reversal

On/off

The device is started with the preselected grinding time, speed and direction reversal. The machine rotates in one direction for the set interval time, comes to a halt, and starts again immediately in the other direction without a pause time.

6.6.6 Pause time

The pause time between intervals can be set here.

No pause time can be set if no interval has been set.

The device is started with the preselected grinding time, speed, direction reversal and the set pause time. The machine rotates in one direction for the set interval time and comes to a halt; once it has stopped at the set interval time, the previously set pause time is displayed and counts down to 00:00:00.

The device starts again in the other direction when the pause time has expired.

6.6.7 Save parameters

The previously set parameters such as grinding time and speed can be saved in a memory here.

- Set the desired parameters.
- By turning 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 on **Program**.
- Press the operating button (F) to select a program memory location.
- By pressing the operating button (F), switch to the desired memory location.
- Press the operating button (F) to exit the memory location selection.
- Select either
 - **Save to save settings** or
 - **Back to cancel without saving**.

6.7 Programme Mode

6.7.1 Change program

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

- By turning the control knob (F), switch to the **Change program** menu option.
- Press the control knob (F).
 - The **Save parameters** menu opens and the dark cursor line is on **Program**.

NOTICE

You can change the active program or any other program.

- Press the control knob (F) to activate the program selection.
- By turning the control knob (F), switch to the desired memory location.
- Press the control knob (F) to exit the memory location selection.
- Adjust the desired grinding parameters.
- Finally select either
 - **Save to save settings** or
 - **Back to cancel without saving**.
- This takes you back to the Program level.

NOTICE

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

6.7.2 Delete program

You can delete the saved parameters for any program in this menu

NOTICE

Only the saved parameters for the program concerned are deleted. The program memory location continues to exist.

- By turning the control knob (F), switch to the **Delete program** menu option.
- Press the control knob (F).
- The **Delete program** menu opens and the dark cursor line is on Program.
- Press the control knob (F) to activate the program selection.
- By turning the control knob (F), switch to the desired program.
- Press the control knob (F) to exit the program selection.
- Finally select either
 - **Delete** to delete the settings or
 - **Back** to cancel without deleting.
- This takes you back to the Program level.

6.8 Basic settings

NOTICE

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

6.8.1 Automatic opening

In this menu you can set whether the grinding jar lid opens automatically when grinding ends or only when the button is pressed.

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



Fig. 2: Automatic opening pictogram

6.8.2 Language

You can select the menu language here. After selecting 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 desired language by turning the operating button.
- Press to confirm the selection; “open lid” appears on the display.

6.8.3 Brightness

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

6.8.4 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.

6.8.5 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.

6.8.6 Acoustic warning signal

Error messages indicating incorrect operation can be supported by an acoustic warning signal.

The corresponding pictogram appears if the function has been switched off

6.8.7 Service

6.8.7.1 Operating hours

Grinding hours are counted, i.e. the total times between START and STOP. It is not possible to manipulate the times.

6.8.7.2 Software version of display

Shows the software version of the display.

6.8.7.3 Software version of the controller

Shows the version of the operating software .

6.8.7.4 Update software

The version of the operating software can be queried and updated where applicable. Contact your Retsch distributor where necessary. If you have accessed the menu inadvertently and it is not possible to return to the preceding menu, switch the device off at the main switch and restart it.

6.9 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: View of the back

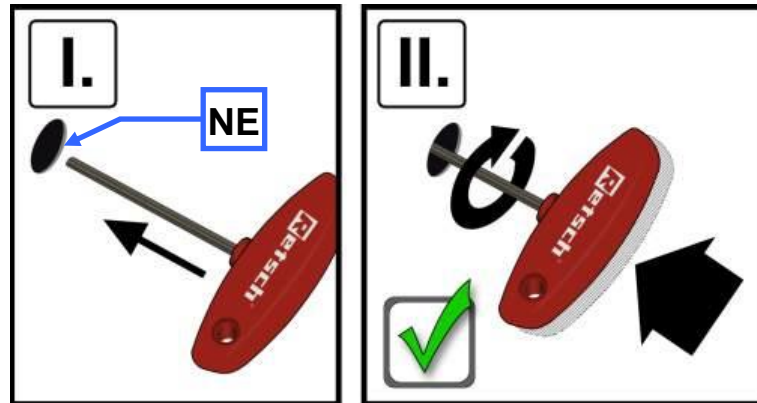


Fig. 16: Emergency unlocking of flap

The GM300 can be opened manually during a power failure.

- Use a slotted screwdriver and lever the plastic plug off over the opening (**NE**).
- (I.) Put the key into the left side opening (**NE**).

To unlock the closure gear, the key must be pushed in further with some degree of force.

- (II.) While pushing the key in, turn it in a clockwise direction as far as it will go.

The lid can be opened now.

- Use the plastic plug to close the side opening again.

7 Working instructions

Four sharp, sturdy blades rotate in the centre of the grinding container. Depending on the direction of rotation, cutting is done with the blunt side (preliminary size reduction) or with the sharp side (fine size reduction). To protect the knife from damage from hard material, the knife are equipped with a counterblade.

The powerful industrial motor with 1500 watts in continuous duty or 3000 watts in brief peak performance drives the knife indirectly. Preprogrammable speeds that are electronically maintained at a constant level allow a high level of reproducibility.

8 Fault messages

Fehlercode	DEFECT DESCRIPTION TRANSLATION
E10	DRIVE OVERLOAD
E20	FAILURE MAIN BOARD
E23	FAILURE FAN
E25	FAILURE DISPLAY
E26	FAILURE FREQUENCY CONVERTER
E41	FAILURE SPEED SENSOR
E50	FAILURE IN SAFETY CIRCUIT
H10	ALLOW DRIVE TO COOL DOWN
H40	CLOSE MACHINE
H42	OPEN AND CLOSE LID/COVER
H47	CHECK LID SWITCH

9 Cleaning and service

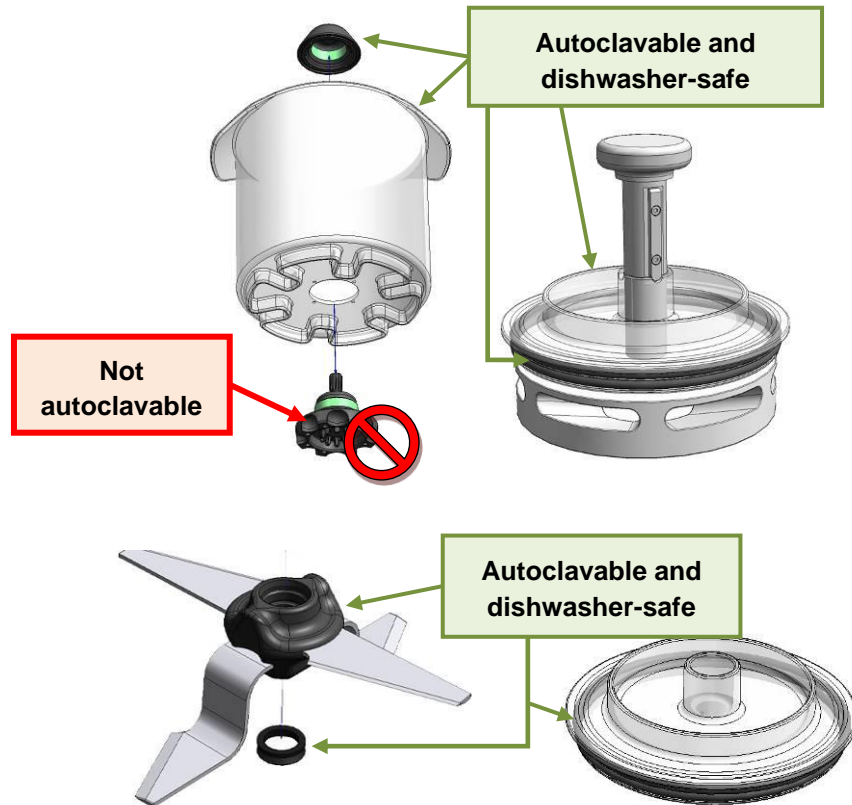


Fig. 17: Autoclavable and dishwasher-safe components and exceptions

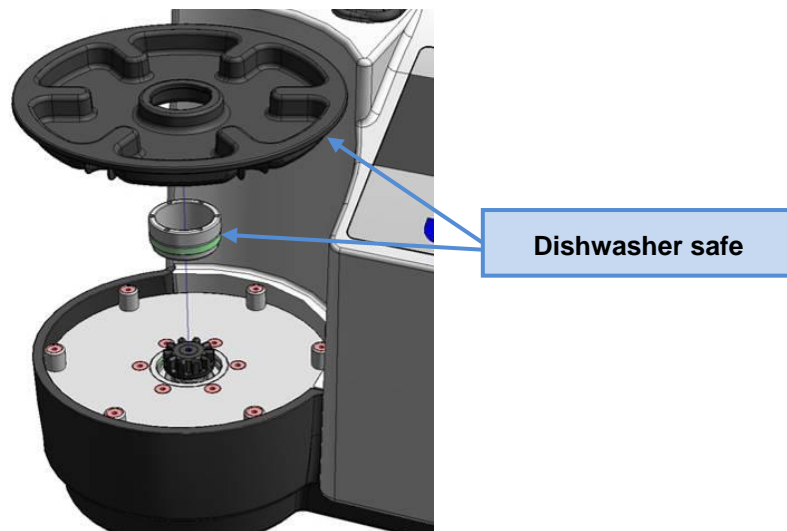


Fig. 18: Dishwasher safe components

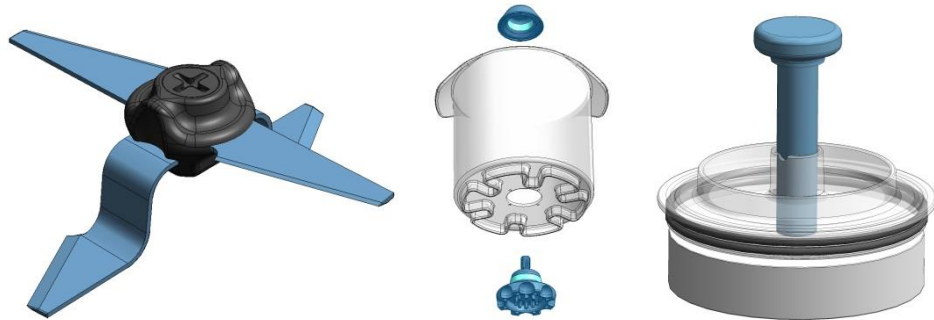
The cleaning of the grinding set consisting of grinding container, lid and knife insert should be carried out regularly.

All parts can be cleaned with alcohol or normal household detergent. In addition, all parts are dishwasher suitable.

The plastic grinding vessel made of PC (polycarbonate), the lid and the blade insert can be autoclaved at a maximum of 121°C and a pressure between 1.3 and 1.5 bar.

NOTICE

- Dry all metallic parts of the grinding jar and the knife after drying to prevent possible corrosion.



Under certain conditions there may be corrosion on metallic parts. This is not a quality defect and can occur despite best material quality.

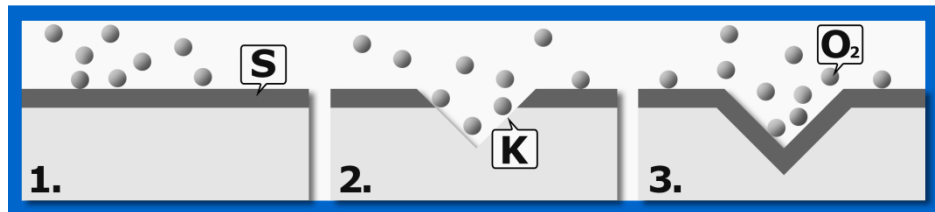


Fig.19: Protective oxide layer

The resistance of “stainless” steel is attributable to an extremely thin invisible protective oxide layer (S), the so-called passive layer.

Since the grinding tool surfaces are exposed to mechanical load, small areas of corrosion (K) may appear after this protective oxide layer has been damaged.

- This corrosion can be prevented if you dry the grinding tools after rinsing.

In the case of the steel used by Retsch, the protective layer is automatically continuously formed through a reaction with oxygen (O₂).

- Should areas of rust develop despite this, they can be removed by vigorous polishing.

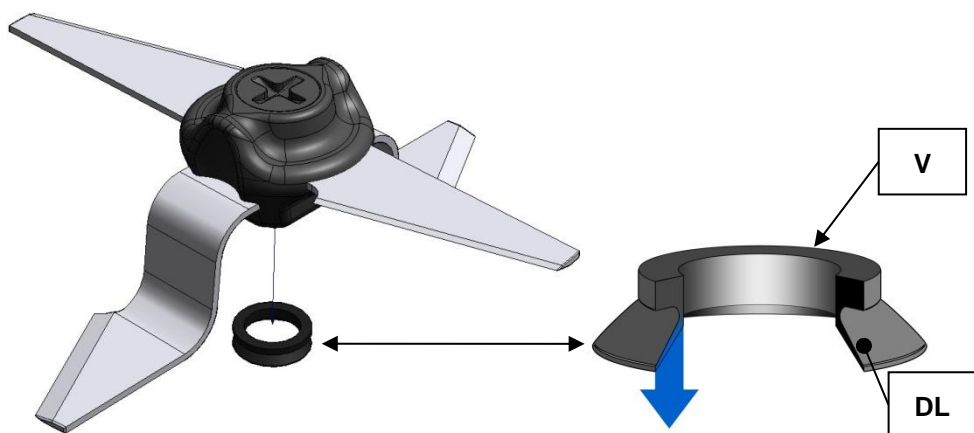


Fig. 20: Ring seal

NOTE

- Check the state of the V-ring seal (**V**) regularly.
 - The bottom edge of the lip seal (**DL**) must be clean and smooth.
 - Replace the V-ring seal when the lip seal is brittle, cracked, frayed or damaged in order to prevent rust and damage to the cutter bearing.
- (V-ring seal part number: **05.111.0243**)

10 Accessories

NOTE

The use of the gravity lid reduces the possible filling capacity of the grinding jar by 5 cm under the edge of the jar. This corresponds to a filling capacity of 3.5 litres.

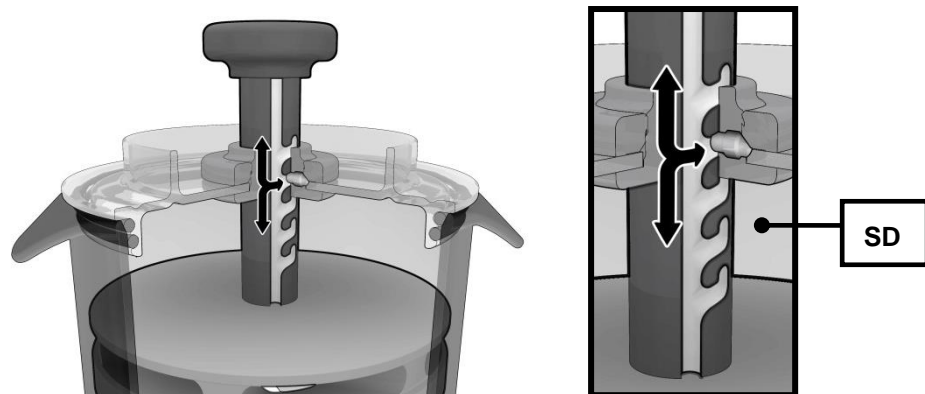


Fig. 21: Engaging the gravity lid in the securing recess

- Pull the handle upwards before inserting the gravity lid.
- Turn the gravity lid to engage the lid (**SD**).
- Put the gravity lid onto the grinding jar.
- Insert the grinding jar with gravity lid into the device.
- Close the flap and start the grinding process.
- Disengage the gravity lid during grinding and let it drop.

Once the mill is started, the required grinding chamber capacity changes due to the circulating effects and centrifugal forces etc. acting on the now liquefied grinding stock. The gravity lid moves as well and in this way constantly optimises the grinding chamber. However, this works only with products which have a high water content.

11 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:

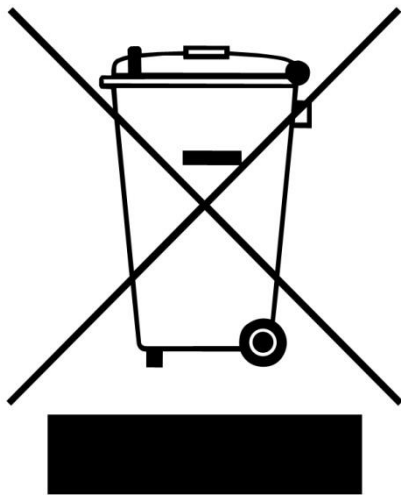


Fig. 22: Disposal label

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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KNIFE MILL

GM 300 | 20.252.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. Frank Janetta, Head of Development





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