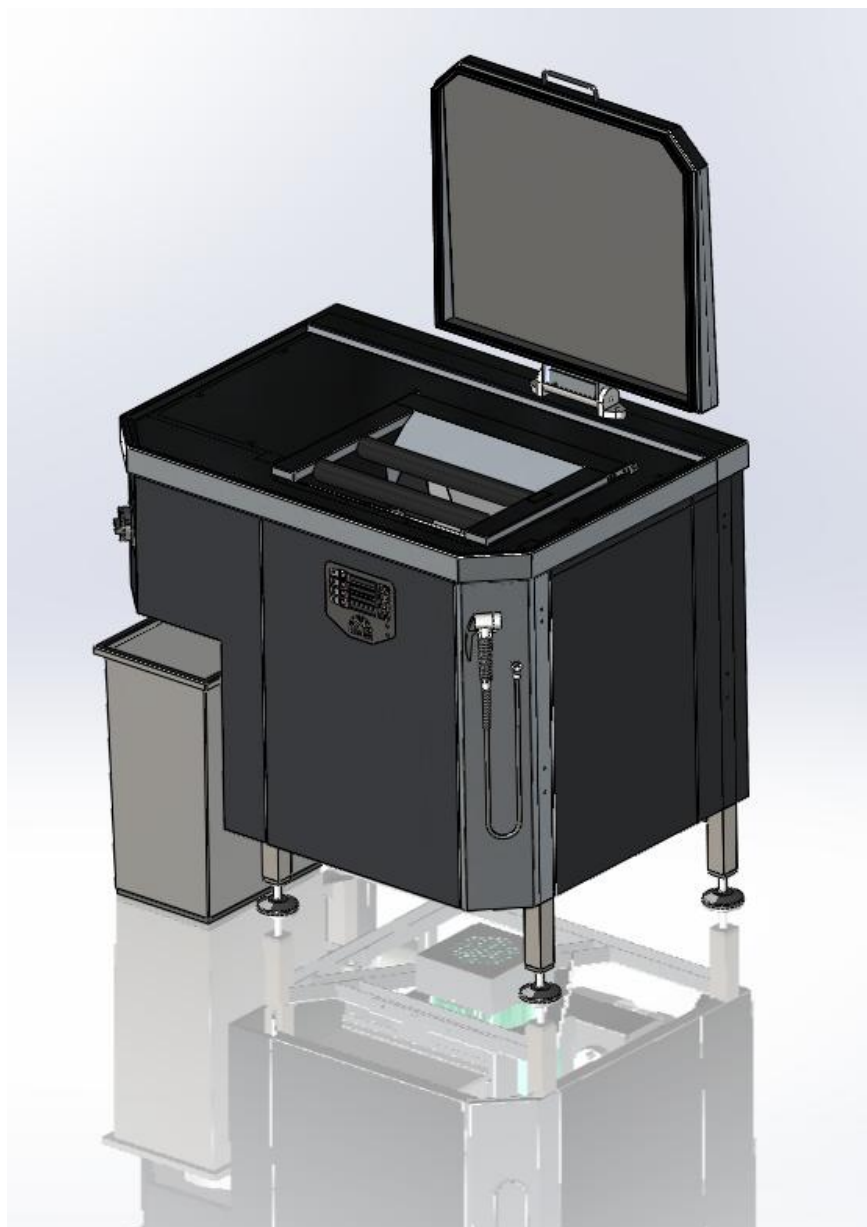


Operating- and maintenance instructions

'Original instructions'

Rendisk Solus



Rendisk
P.O. Box 25
NL -7260 AA Ruurlo
The Netherlands



Version date: 5th December 2013
Doc. number: Instructions_Solus v20131205

**Change log**

<i>Date</i>	<i>By</i>	<i>Description</i>
2013-12-5	FvdL	First issue

Table of contents

CHANGE LOG	1-2
CHAPTER 1 INTRODUCTION	1-6
1.1 WARNING	1-6
1.2 OBJECTIVE AND TARGET GROUP OF THIS MANUAL	1-6
1.3 RELATED DOCUMENTS.....	1-6
1.4 MANUFACTURER.....	1-6
1.5 COPYRIGHT.....	1-6
1.6 LIABILITY	1-7
1.7 INTENDED USE.....	1-7
1.8 MACHINE IDENTIFICATION	1-7
1.9 WARRANTY	1-7
CHAPTER 2 SAFETY RULES	2-8
2.1 SAFETY AND PRECAUTION SYMBOLS.....	2-8
2.2 OPERATORS.....	2-8
2.3 MAINTENANCE ENGINEER.....	2-8
2.4 SAFETY INSTRUCTIONS	2-9
2.5 POSITIONING OF THE UNITS	2-9
2.6 SAFETY PRECAUTIONS.....	2-9
2.7 HYGIENE	2-10
2.8 NOISE.....	2-10
2.9 WASTEWATER	2-10
2.10 PERSONAL PROTECTIVE EQUIPMENT	2-10
CHAPTER 3 MACHINE DESCRIPTION	3-11
3.1 PURPOSE OF THE UNIT	3-11
3.2 TECHNICAL SPECIFICATION.....	3-11
3.3 SOLUS MAIN COMPONENTS.....	3-12
3.3.1 Food waste intake	3-13
3.3.2 Main parts front side	3-14
3.3.3 Main parts back side	3-15
3.3.4 Main parts left side.....	3-16
CHAPTER 4 MODES OF OPERATION	4-17
4.1 PRIOR KNOWLEDGE	4-17
4.2 PRECAUTIONS.....	4-17
4.3 CONTROLS.....	4-17
4.3.1 Main switch	4-17
4.3.2 Control panel	4-18
4.4 NORMAL OPERATION MODE.....	4-18
4.4.1 Start-up	4-18
4.4.2 Loading food waste intake.....	4-18
4.4.3 Batch cycle	4-20

4.4.4	Continuous cycle	4-20
4.4.5	Heavy duty mode (Optional).....	4-20
4.4.6	Cleaning cycle	4-20
4.4.7	Jam release grinder of Solus	4-20
4.4.8	Shut down	4-21
4.4.9	Cleaning food waste chute.....	4-21
4.4.10	Activate service mode	4-21
4.4.11	Deactivate service mode	4-22
4.5	PROGRAM MODE	4-23
4.5.1	Adjusting batch cycle time in normal mode (Led L1 on).....	4-23
4.5.2	Adjusting fresh water quantity in normal mode (Led L2 on).....	4-23
4.5.3	Adjusting batch cycle time in Heavy duty mode (Led L3 on).....	4-24
4.5.4	Adjusting fresh water quantity in Heavy duty mode (Led L4 on).....	4-24
CHAPTER 5 INSTALLATION.....		5-25
5.1	SAFETY.....	5-25
5.2	INSTALLATION REQUIREMENTS.....	5-25
5.3	MECHANICAL INSTALLATION.....	5-25
5.4	ELECTRICAL INSTALLATION.....	5-25
5.5	FIRST START UP TEST	5-25
CHAPTER 6 REPAIRS AND MAINTENANCE		6-27
6.1	GENERAL.....	6-27
6.1.1	Maintenance interval on installed parts	6-27
6.2	ACCESS FRONT	6-28
6.3	ACCESS BACK SIDE FREE STANDING UNIT	6-30
6.4	SPARE PARTS LIST.....	6-30
CHAPTER 7 STORAGE AND TRANSPORT		7-31
7.1	STORAGE.....	7-31
7.2	TRANSPORT.....	7-31
CHAPTER 8 DISMANTLING AND SCRAPPING		8-32
8.1	ENVIRONMENTAL PROTECTION	8-32
8.2	OIL, OILY WASTE AND GREASES	8-32
8.3	PLASTICS	8-32
8.4	METALS	8-32
8.5	ELECTRICAL AND ELECTRONIC WASTE	8-32
APPENDIX I MALFUNCTION LIST		8-33
APPENDIX II CE IIA DECLARATION.....		8-34
APPENDIX III MAINTENANCE AND REPAIR GRINDER.....		8-35
APPENDIX IV SPARE PARTS LIST		8-38

Table of figures

Figure 1 Machine identification plate (example).....	1-7
Figure 2 Overview Solus with separate pump and dewater unit.....	3-11
Figure 3 Solus	3-12
Figure 4 Top side (intake) Solus (Grill in Closed (Left) and Open (right) position)	3-13
Figure 5 Main components Front side	3-14
Figure 6 Main components back side.....	3-15
Figure 7 Mainparts left side Solus.....	3-16
Figure 8 Control panel drop unit	4-18
Figure 9 maximum fill level	4-19
Figure 10 Materials that can (not) be processed with Solus	4-19
Figure 11 Jam release wrench.....	4-21
Figure 12 Disassembling front panel	4-22
Figure 13 Electrical cabinet	4-22
Figure 14 Control panel	4-23
Figure 15 Clockwise rotating grinder	5-26
Figure 16 Exploded view Solus	6-29
Figure 17 Example CEIIA declaration	8-34
Figure 18 Jam release wrench.....	8-35
Figure 19 Exploded view grinder	8-36

Chapter 1 Introduction

This chapter provides basic information on the Rendisk Solus unit and the corresponding operating and maintenance instructions.

1.1 Warning

Read these instructions carefully before you start the Solus. Only then is maximum safety ensured. Operation of and maintenance on the Solus may only be carried out by qualified and authorised personal.

1.2 Objective and target group of this manual

These Operating and maintenance instructions are intended to provide operators and maintenance engineers with information about using and maintaining the machine.

Where Chapter 1 (Introduction) to Chapter 4 is important for operators, all chapters are relevant to maintenance engineers.

1.3 Related documents

Next to above operation and maintenance instructions the following documents are part of the overall documentation:

Electro-technical drawings.

CE-2A certification (Appendix II).

1.4 Manufacturer

Rendisk BV
Sporstraat 62
NL – 7261 AG Ruurlo
P.O. Box 25
NL - 7260 AA Ruurlo
The Netherlands

Phone: +31 573 - 458 455
Fax: +31 573 - 458 399
e-mail: info@rendisk.com
Internet: www.rendisk.com

1.5 Copyright

Copyright © 2013 Rendisk BV. All rights reserved.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the manufacturer.

1.6 Liability

Rendisk accepts no liability for unsafe situations, accidents and/or damage resulting from any of the following points:

- Ignoring warnings or instructions stated on the machine or in these Operating and maintenance instructions.
- Using the machine for other applications or under other conditions than stated in these Operating and maintenance instructions.
- Making changes to the machine of any kind. This also includes using other replacement parts and changing the machine's internal control program.
- Insufficient maintenance.

Rendisk cannot be held liable for consequential damage or loss such as damage to products, interruptions of the business operations, and any loss of production etc. following machine malfunctions.



Warning: Any modifications to the unit will cause the invalidation of the CE certification. Hazardous situations may arise.

1.7 Intended use

The Solus is used for organic kitchen waste disposal. Paper, glass, plastics and metal cannot be processed in the system.

1.8 Machine identification

A machine identification plate has been applied.



Figure 1 Machine identification plate (example)

1.9 Warranty

For the warranty regulations please refer to the customer contract.

Chapter 2 Safety rules

This chapter provides information on general safety rules. Read this chapter carefully before starting up the unit or before you carry out maintenance work.

2.1 Safety and precaution symbols

This chapter provides information on general safety rules. Read this chapter carefully before starting up the unit or before you carry out maintenance work.



Tip:

A suggestion to facilitate an easier or more suitable execution of a task.



Watch out:

Points to possible problems.



Caution:

Damage to the unit or the product may result if the instructions are not carefully executed.



Warning:

Danger of serious injury of the operator or damage to the unit if the instructions are not carefully executed.



Warning:

Danger due electrical shock



Warning:

Danger for pinch risk

2.2 Operators

The Rendisk Solus may only be operated by qualified and trained personnel.



Warning:

The safety rules listed in this document must be obeyed. If you violate them unacceptable risks may result.

The operators must be aware of the relevant chapters of the operating and maintenance instructions (Chapter 1 to Chapter 4).

2.3 Maintenance engineer

All maintenance and modification activities on the unit may only be carried out by personnel instructed and trained accordingly. Please contact Rendisk for more information.



Warning:

The safety rules listed in this document must be obeyed. If you violate them unacceptable risks may result.

The maintenance engineer must be fully aware of the complete contents of the operating and maintenance instructions.



Warning:

Any modifications to the unit will cause the invalidation of the CE certification. Hazardous situations may arise.

2.4 Safety instructions

The machine meets the basic health and safety requirements of the relevant directives of the European Union. Improper or careless use can lead to dangerous situations.



Be aware of dangerous situations!

Please observe the following general safety instructions:

- Connect the machine in accordance with the basic health and safety requirements of the relevant European directives.
- Exercise caution with loose hair and clothing.
- Keep your hands away from dangerous zones.
- Never power up the machine if people are in contact with it.
- Electrical isolate the machine before carrying out maintenance work on the machine.
- Faulty safety equipment must be replaced before the machine is used in production.
- The machine must be maintained in accordance with the instructions found in chapter 6
- Changes to the machine must not be implemented without the prior consent of the manufacturer.
- The safety equipment of the machine must be checked weekly for correct operation.
- Do not remove or cover any labels on the machine
- The unit is suitable for indoor use only.

2.5 Positioning of the units

Position the installation in such a way that the pathway for the operator and the service engineer is sufficiently wide. These pathways must not be obstructed by equipment which can cause dangerous situations for the personnel; this is important with respect to escape routes.

2.6 Safety precautions

The following primary precautions features are integrated:

- All units have a main switch to turn off all energy to the unit to stop the process at once.
- The main switch on each unit can be locked out in case of maintenance to prevent uncontrolled start of the units.
- The Solus is equipped with a safety grid and lid which prevents access to the rotating parts of the food waste grinder.
- A safety contact prevents the Solus to start in case the grid has been removed.
- The rotary blade stops automatically if the safety grid is removed during operation.
- The unit is delivered with a CE-2A certificate.
- There are rotating parts at the outlet of the dewater unit. To prevent access to these rotating parts the collection bin must be in place. Therefore the unit has a bin detection. If the bin is not in place the unit will not start. If the bin is removed during operating, the machine will stop instantly.

2.7 Hygiene

Good hygiene is very important. Please adhere to the following rules as guideline:

- Clean the waste station at least once a day.
- Use cleaning and disinfecting agents to ensure an optimum result (cleaning agent should not affect Stainless steel 304, NBR or EPDM components of the drop unit).

Cleaning procedures of the Solus should be integrated in the existing hygiene plan of the site.

The Solus has a cleaning cycle option to clean internal wet parts and piping. We recommend using this option at least once a day to prevent buildup of fogs and oils. You can contact Rendisk for additional solutions to keep the machine in a proper condition.



The operator always remains responsible for good hygiene.

2.8 Noise

The A-weighted equivalent continuous noise level on the workstations is below 80 dB (A) during normal operation. Higher noise levels may occur at the installation site due to local conditions. In this case, the employer is obligated to provide operating personnel with appropriate protective equipment.

2.9 Wastewater

The system dewateres the food waste. The waste water can be drained to the sewer. Check local regulations for additional grease trap or other requirements.

2.10 Personal protective equipment

For normal operation (waste station) we advise the operator to wear following personal protection:

- Hand protection for hygiene (one way gloves)
- Protective clothing against water
- Safety shoes. Be aware of slippery floor.
- Ear protection in case noise level increases above 80dB.

For cleaning and maintenance:

- Hand protection for hygiene (one way gloves) in case of working at food waste contact parts.
- Protective clothing against water
- Safety shoes. Be aware of slippery floor.

Chapter 3 Machine description

This chapter gives general information about the Solus

3.1 Purpose of the unit

The unit is designed for the dispose of food waste (organic material only) in a hygienic and ergonomic way at the source (restaurant or kitchen) with a minimum of logistics and handling of personnel to the waste storage room.

3.2 Technical specification

The Solus is a standalone unit which reduces the volume of the loaded foodwaste on the spot. The food waste is loaded on the grid where it falls through. Below the grid is a grinder which reduces the size of the particles in the food waste. From here the food waste is pumped to a dewater unit where the water is separated from the solid parts. The water is partly recycled and the solids are collected in a bin. The system consist the following parts:

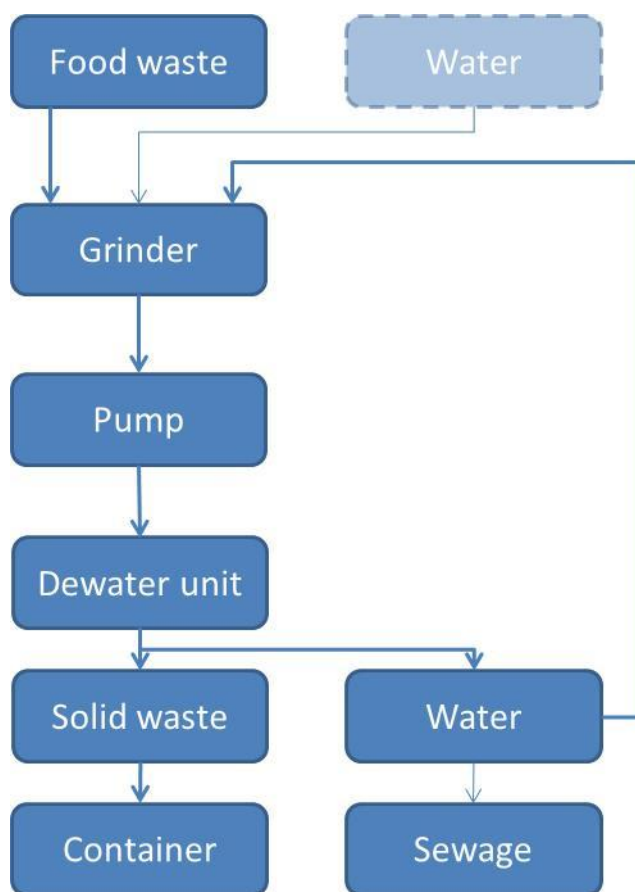


Figure 2 Overview Solus with separate pump and dewater unit

3.3 Solus main components

After opening the cover (2), the waste can be dropped into the waste inlet and safety grid (1). The waste falls on the grinder. After closing the safetygrid and cover the cycle can be started by pressing the start button on the control panel (5). Some water will be added to the food waste (3). The food waste will be grinded and transported to the dewater unit. The hand shower can be used for cleaning the station (6).

1. Waste inlet and safety grid
2. Sound isolated lid
3. Water nozzle
4. Main switch (lockable)
5. Control panel
6. Hand shower
7. Solid waste storage bin

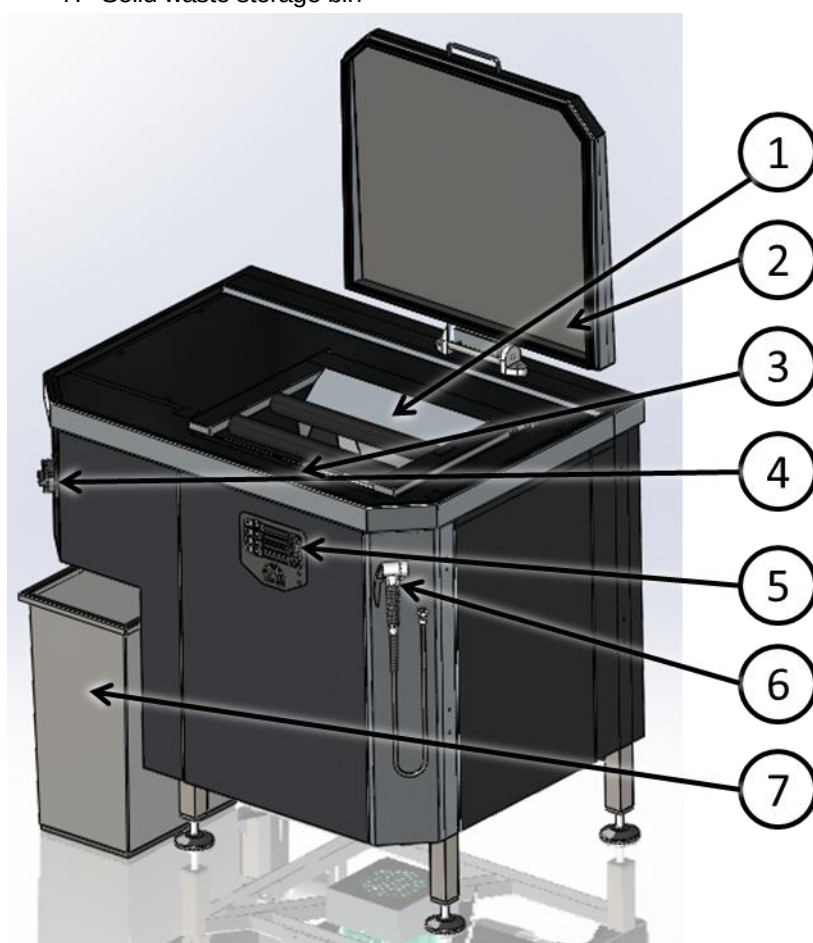


Figure 3 Solus

3.3.1 Food waste intake

The maximum intake for each cycle is 16 liters. If more waste is added the water will float through the overflow opening (1). The food waste inlet is covered with a safety grid (2) which prevents a human arm to reach into the grinder (5). On the safety grid there are hit bars (3) to easy empty a plate (only one hand needed). The grid also functions as a guide for the food waste to slide along the optional magnet (4) which is situated at the far inside of the food waste inlet. This magnet will hold cutlery (metal) to prevent the system against damage. There is a safety sensor (reed contact) (7) which detects if the safety grid is closed before starting a cycle.

1. Overflow
2. Safety grid
3. Hit bar
4. Magnet (optional)
5. Grinder opening
6. Spray nozzle
7. Safety sensor (under table top and in safety grid (or lid))



Warning:

Never reach into a working drop unit, this may result in severe injury!

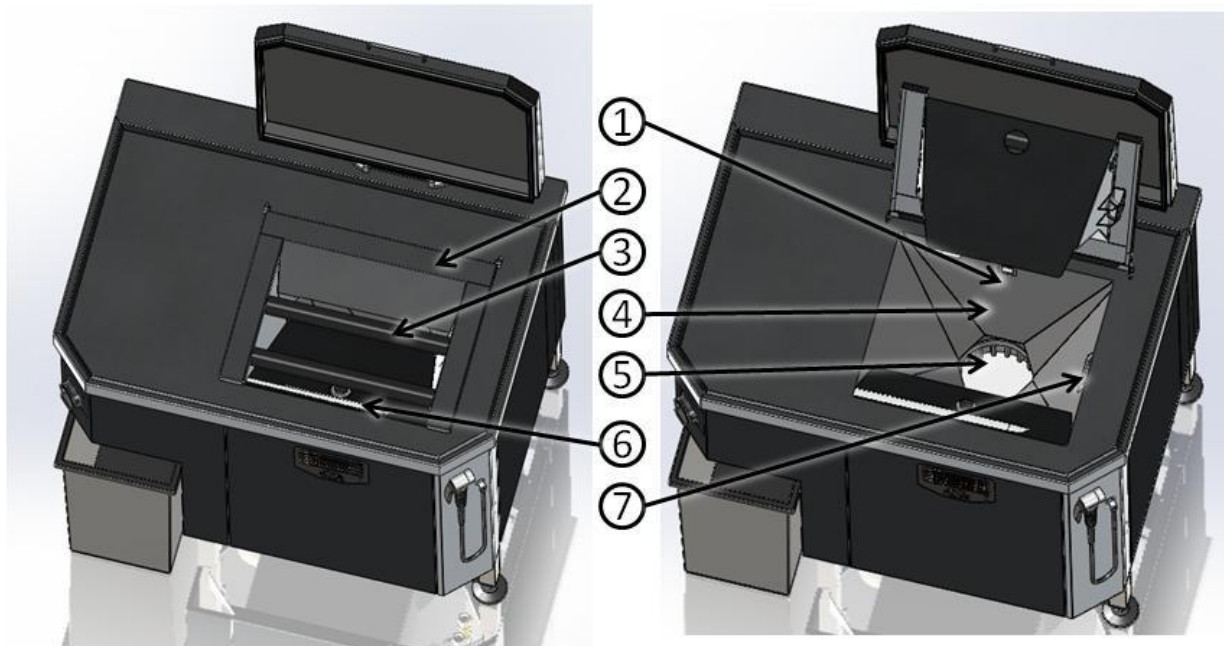


Figure 4 Top side (intake) Solus (Grill in Closed (Left) and Open (right) position)

3.3.2 Main parts front side

For maintenance and failure analyses the main components are described in the figure below:

1. Main switch
2. Dewater unit outlet
3. Solid food waste bin
4. Safety sensor
5. Control panel
6. Hand shower
7. Electrical cabinet
8. Cold and warm water supply

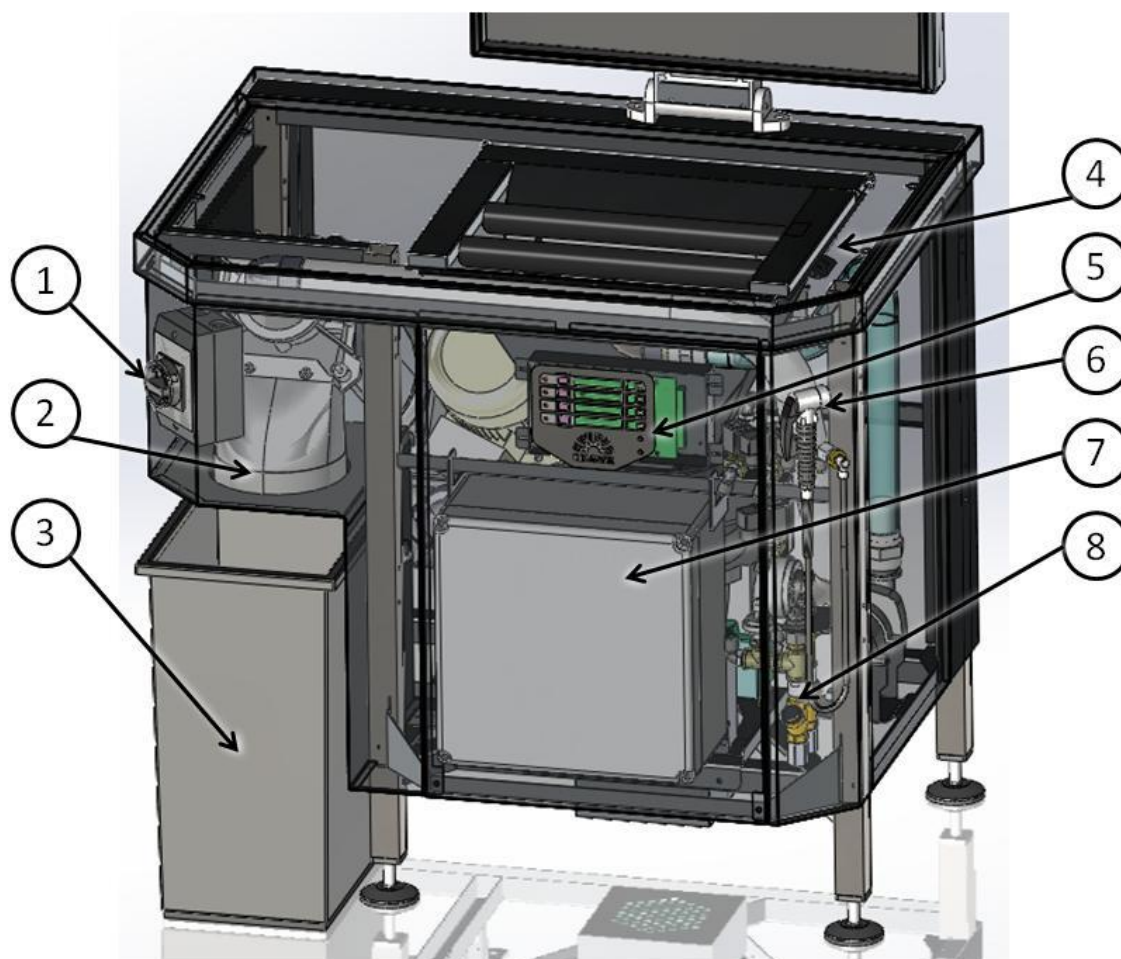


Figure 5 Main components Front side

3.3.3 Main parts back side

For maintenance and failure analyses the main components are described in the figure below:

1. Overflow
2. Magnet (optional)
3. Cold and warm water supply valves
4. Grinder
5. Recycle water pump
6. Dewater unit
7. Recycle water buffer

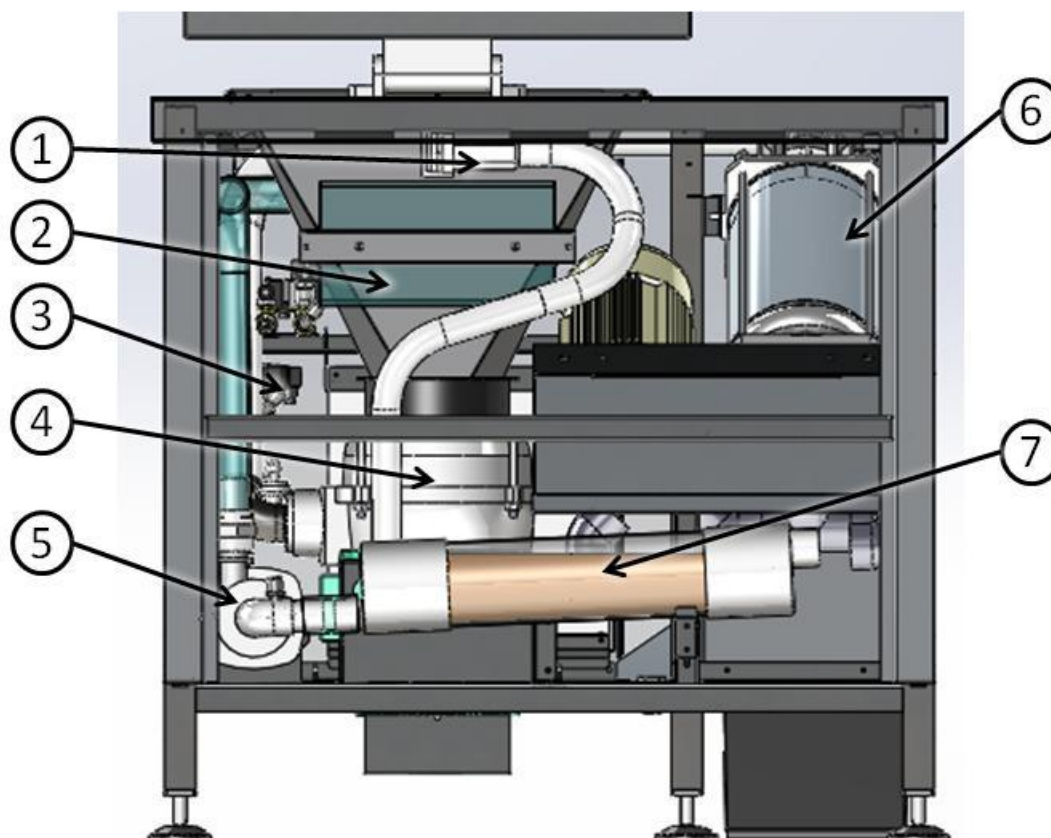


Figure 6 Main components back side

3.3.4 Main parts left side

For maintenance and failure analyses the main components are described in the figure below:

1. Grinded food waste transport pipe
2. Solid food waste outlet
3. Dewater unit
4. Bin detector
5. Water outlet dewater unit
6. Recycle water pipe (to pump)
7. Waste water outlet to sewage

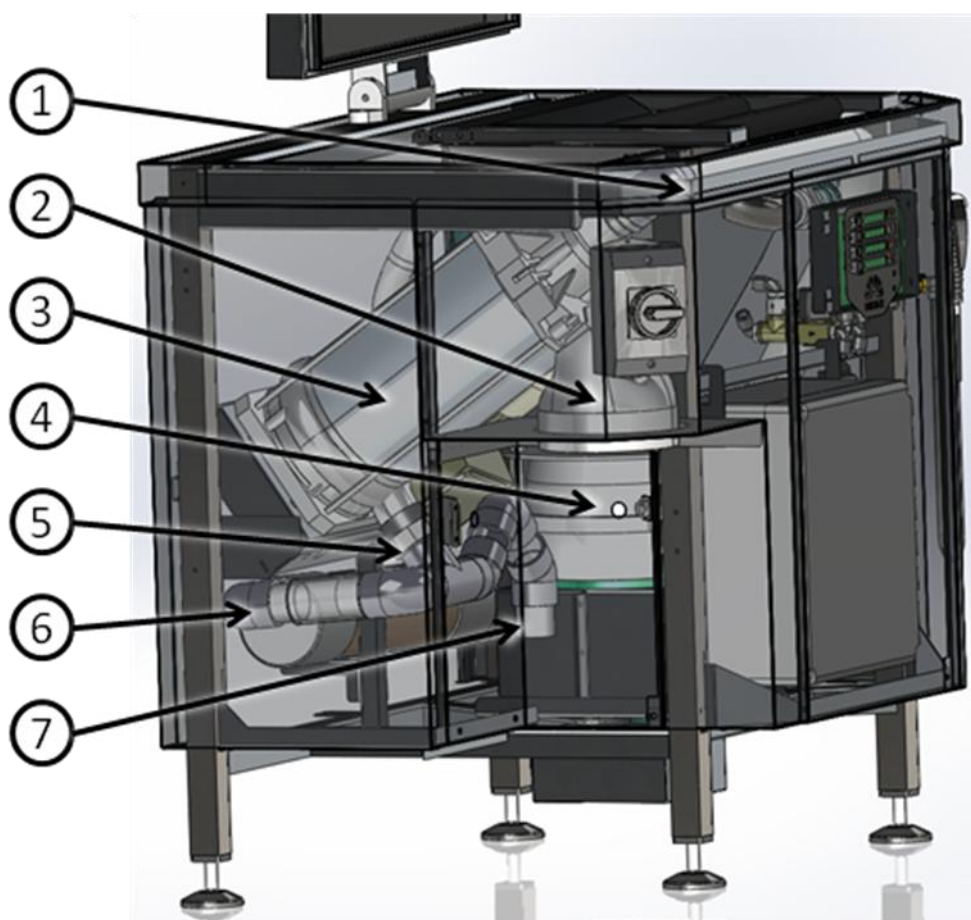


Figure 7 Mainparts left side Solus

Chapter 4 Modes of operation

4.1 Prior knowledge

The operator must be aware of the operation of the Solus (described in Chapter 3) and must be able to work safely with the Solus, as described in Chapter 2.

4.2 Precautions



Always check the following points before starting the machine

Before switching on and starting the Solus, the following actions must be carried out:

- Remove all foreign objects from the machine.
- Check that all safety provisions are in place.
- Check that all safety provisions work properly.
- Check that all doors and covers are present and closed and a collection bin is placed.
- Check water supply and pressure.
- Check power connection and PE.
- Check piping for leakage.

4.3 Controls

The Solus has the following controls:

- Main switch.
- Control panel.

4.3.1 Main switch

The unit is equipped with a main switch. In case of maintenance this can be locked. This switch can also be used as emergency stop to stop all running cycles.

4.3.2 Control panel

At the frontside of the solus you can find the control panel. In Figure 8 is the control panel explained.

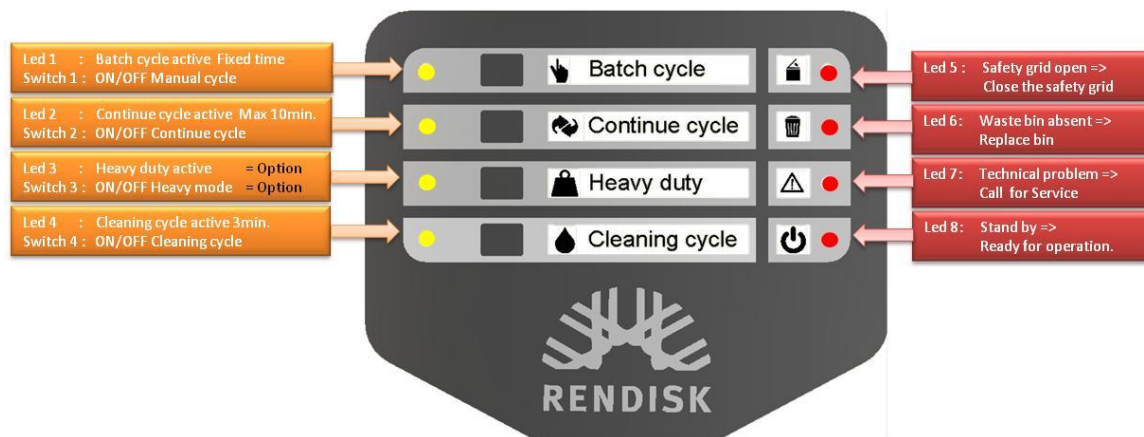


Figure 8 Control panel drop unit

4.4 Normal operation mode

4.4.1 Start-up

1. Turn on the main power switch on the Solus. The system automatically starts up in normal operation mode.



The status of the system can be checked on the control panel.

2. Check the collecting bin and replace/empty if necessary.
3. The system is ready for use.

4.4.2 Loading food waste intake



Do not throw cutlery, plastic, glass, rope or any other garbage that is not food waste (organic) into the drop unit. This can damage the system and will reduce the lifetime.



Do not throw coffee grounds or frying fat/oil into the drop unit. This can lead to blockade of the piping or dewater unit.



Do not overload the Solus.



Do not throw food waste with a temperature above 60°C in the drop unit.

The following actions have to be carried out to process the food waste correctly:

1. Remove cutlery, plastic, coffee grounds or any other waste that is not food waste (organic) from the trash.

2. Open the lid.
3. Throw the food waste into the chute.

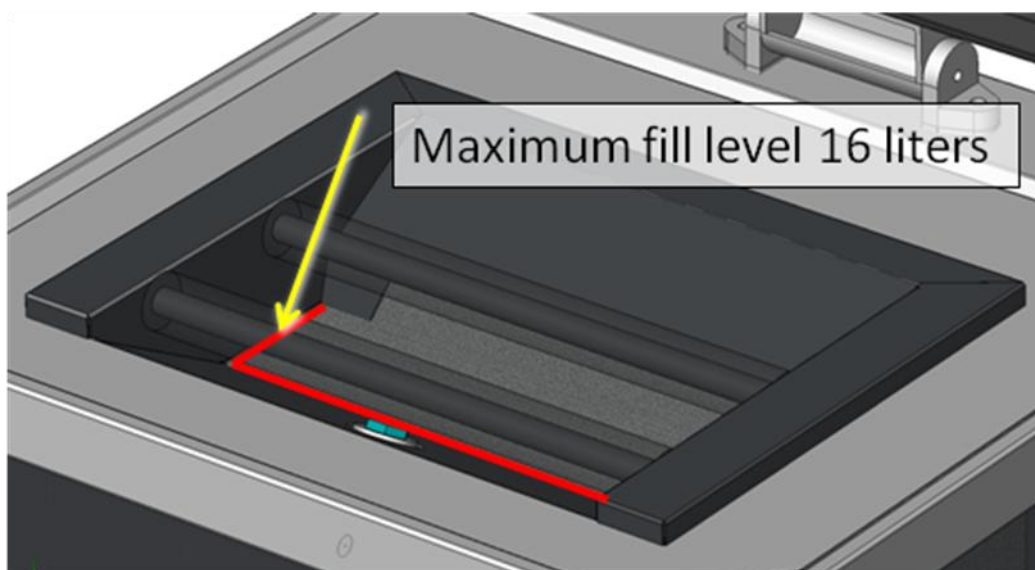


Figure 9 maximum fill level

4. Close the safety grid (and the cover)
5. Start the cycle.

<i>Do process</i>	<i>Do process but follow some simple rules</i>	<i>Do not process</i>
Process food leftovers, any kind 	- Biodegradable and compostable items can be processed in typical 'table quantities' - Papers and cardboard should be collected separately, but in small quantities it can be processed 	Plastic, glass, tin, metal and textiles pollute organic waste and must be collected separately 

Figure 10 Materials that can (not) be processed with Solus

4.4.3 Batch cycle

If the push button 'Batch cycle' (Switch 1 in Figure 8) is pressed once the Solus will start a batch to empty the food waste intake (max 16 liters). The led will indicate that the cycle is running. If the button is pressed once during the batch, the Solus will stop the running cycle instantly and return to standby mode.

4.4.4 Continuous cycle

If the push button 'Continuous cycle' (Switch 2 in Figure 8) is pressed once the Solus will start a batch to empty the food waste intake continuously during a maximum of 10 minutes. The led will indicate that the cycle is running. If the button is pressed once during the batch, the Solus will stop the running cycle instantly and return to standby mode.

4.4.5 Heavy duty mode (Optional)

This option can be switched on and off (if installed) by pressing the button 'Heavy duty' once (Switch 3 in Figure 8). This option will change the settings of the Solus to handle more rough and hard organic materials like bones.

4.4.6 Cleaning cycle

If the push button 'Cleaning cycle' (Switch 4 in Figure 8) is pressed once the Solus will start a batch to clean the food waste intake and piping during 3 minutes. The led will indicate that the cycle is running. If the button is pressed once during the batch, the Solus will stop the running cycle instantly and return to standby mode.

4.4.7 Jam release grinder of Solus

In case the grinder of the drop unit reduces speed, stops or does not start:

- Disconnect electrical power supply (main switch).
- Use protective gloves. Remove any non-grindable object from grinding chamber.
- Open safety grid
- Place jam release wrench on centre nut so that a shredder grinding blade fits in the recess of wrench (see Figure 11)
- Rotate the wrench backwards and forwards until the shredder rotates freely in both directions. If needed extend the bar on the wrench. Hit the bar with a hammer.

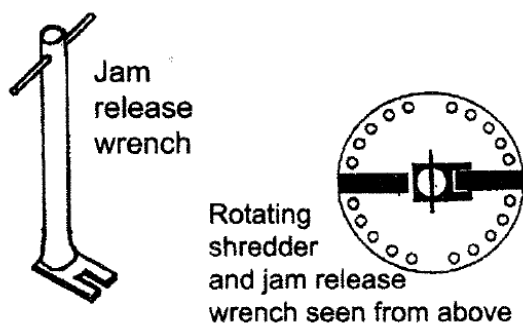


Figure 11 Jam release wrench

4.4.8 Shut down

Turn off the main switch of the unit (Item 1 Figure 5).

4.4.9 Cleaning food waste chute



Warning: Always isolate / disconnect all power to prevent electrical shock before opening the unit!



Always work hygienic when working on parts which have food waste contact

Make sure the main switch is switched off before removing the bin and follow the next steps (See Figure 5):

Wear hand protection for hygiene (one way gloves)

1. Remove Food waste bin.
2. Empty the bin.
3. Clean the chute.
4. Clean the bin detection switch (Item 4 Figure 7) and check functionality (Led 6 in Figure 8 must switch on in case the bin is removed and off when bin is placed)



It is not necessary to remove the front plate for cleaning the chute.

4.4.10 Activate service mode

The following steps need to be done:

1. Switch off the machine with the main switch
2. Disassemble the frontpanel (loosen two M6 bolts at bottom)

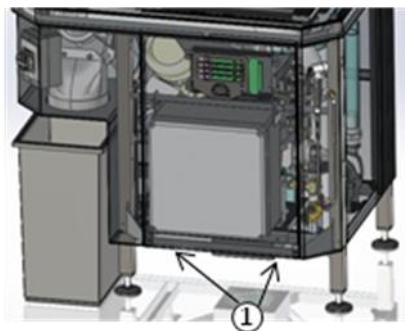


Figure 12 Disassembling front panel

3. Open the electrical cabinet
4. Switch red button (2 in Figure 13) .

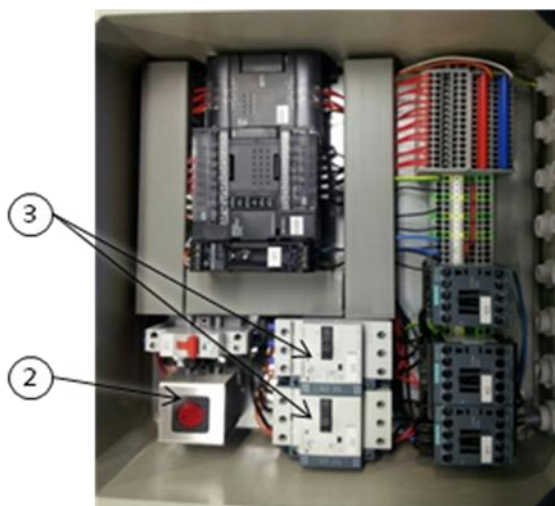


Figure 13 Electrical cabinet

5. Led L5-L8 (Figure 14) will turn on to indicate that Service mode is switched on.
6. Close electrical cabinet.

4.4.11 Deactivate service mode

To return to normal mode follow steps from paragraph 4.4.10 and switch the red button again. Led L5-L8 will turn off.

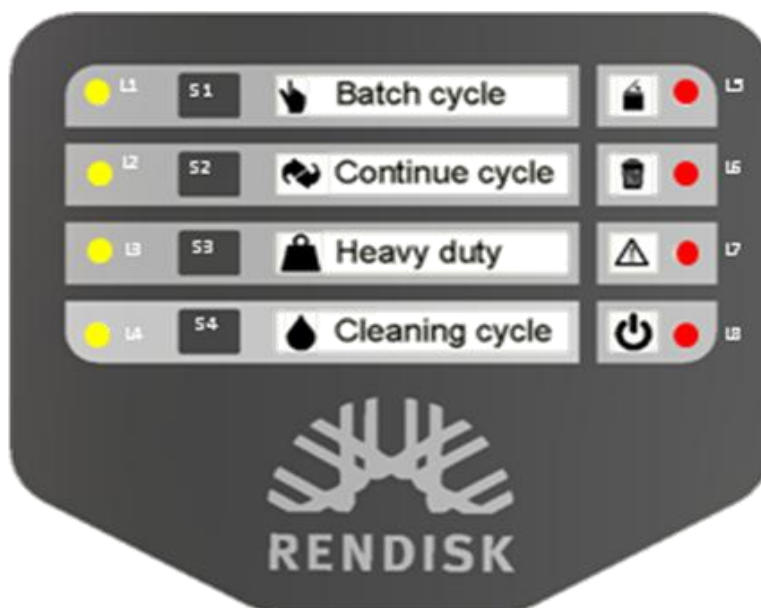


Figure 14 Control panel

4.5 Program mode

Following steps need to be followed to activate program mode:

1. Deactivate service mode (see paragraph 4.4.11)
2. Press S4 (Figure 14) for 5 seconds. Led L1-L8 will light up for 5 seconds.
3. By pressing S1 it is possible to toggle through different settings:
 - a. Led L1 on → Adjusting batch cycle time in normal mode
 - b. Led L2 on → Adjusting fresh water quantity in normal mode
 - c. Led L3 on → Adjusting batch cycle time in Heavy duty mode
 - d. Led L4 on → Adjusting fresh water quantity in Heavy duty mode
4. Press S4 for to leave program mode. Led L1-L8 will light up for 5 seconds.

4.5.1 Adjusting batch cycle time in normal mode (Led L1 on)

By pressing S2 it is possible to toggle trough following options:

- Led L5 on → batch cycle time = 50 seconds
- Led L5-L6 on → batch cycle time = 60 seconds
- Led L5-L7 on → batch cycle time = 70 seconds (default setting)
- Led L5-L8 on → batch cycle time = 80 seconds

Settings are automatically saved by leaving program mode or toggling to other settings.

4.5.2 Adjusting fresh water quantity in normal mode (Led L2 on)

By pressing S2 it is possible to toggle trough following options:

- Led L5 on → adding fresh water during 30% of cycle time
- Led L5-L6 on → adding fresh water during 40% of cycle time
- Led L5-L7 on → adding fresh water during 50% of cycle time (default setting)
- Led L5-L8 on → adding fresh water during 60% of cycle time

Settings are automatically saved by leaving program mode or toggling to other settings.

4.5.3 Adjusting batch cycle time in Heavy duty mode (Led L3 on)

By pressing S2 it is possible to toggle through following options:

- Led L5 on → batch cycle time = 50 seconds
- Led L5-L6 on → batch cycle time = 60 seconds
- Led L5-L7 on → batch cycle time = 70 seconds (default setting)
- Led L5-L8 on → batch cycle time = 80 seconds

Settings are automatically saved by leaving program mode or toggling to other settings.

4.5.4 Adjusting fresh water quantity in Heavy duty mode (Led L4 on)

By pressing S2 it is possible to toggle through following options:

- Led L5 on → adding fresh water during 30% of cycle time
- Led L5-L6 on → adding fresh water during 40% of cycle time
- Led L5-L7 on → adding fresh water during 50% of cycle time (default setting)
- Led L5-L8 on → adding fresh water during 60% of cycle time

Settings are automatically saved by leaving program mode or toggling to other settings.

Chapter 5 Installation

This chapter provides information about how to install the Solus.

5.1 Safety

Carefully read Chapter 2 before proceeding to install the machine. Only then can optimum safety be ensured.

5.2 Installation requirements

Dimensions	: 950 X 1020 x745 mm (free standing) (h x w x d)
Weight	: 250 kg
Hot water	: ½" BSP, pressure 2-4 barg (Check local regulations for backflow prevention)
Cold water	: ½" BSP, pressure 2-4 barg (Check local regulations for backflow prevention)
Ambient temperature	: between 5° and 35°C
Electrical	: 400V+/- 5%, 3F,N, PE , 4.0 kW, 50

5.3 Mechanical installation

- Do not obstruct any escape routes (check with local regulations).
- Keep space in front of every unit for maintenance purposes (minimum 800 x 1020 mm).
- Level the units with the adjustable feet.
- Install and check connections according to paragraph 5.2 .

5.4 Electrical installation

Install electrical connections according to paragraph 5.2 . Verify earth wiring.

5.5 First start up test



This test needs to be done before first usage of the machine to prevent damage!

Please follow next steps:

1. Activate Service mode (See paragraph 4.4.10 Activate service mode)
2. Check if grinder and recirculation pump are running by pressing S1 (Figure 14) (safety grid must be closed). If it fails check motor protection ((3) in Figure 13).
3. Check turning direction of the grinder by pushing S1 (Figure 14) shortly. The turning direction should be clockwise. You can see this when you open the safety grid directly after releasing S1. In case the direction is anti clockwise two phases need to be swapped at main power connection or main power plug.



Figure 15 Clockwise rotating grinder

4. Check if dewater unit is running by pressing S2 (Figure 14). If it fails check motor protection ((3) in Figure 13).
5. Flush with all water valves by pushing S3 and S4 (Figure 14). Check if there is no leakage during flushing.
6. De activate service mode (paragraph 4.4.11).

Chapter 6 Repairs and maintenance

This chapter informs on the required maintenance of the Solus

6.1 General

Maintenance is important for the proper functioning of the Solus. Overdue maintenance may result in dangerous situations.



Overdue maintenance may lead to dangerous situations.



Maintenance activities must only be carried out by staff specially trained for this purpose (maintenance engineer, see paragraph 2.3). Carry out the activities as instructed.



Before carrying out any maintenance activities on the Solus switch off the machine components with the main switch.



Always work hygienic when working on parts which have food waste contact

6.1.1 Maintenance interval on installed parts

Maintenance intervals can be found in Appendix II .

6.2 Access front

Only qualified personal (see also 2.3) are allowed to open the Solus. For maintenance or failure of the cutlery magnet, supply water valves, cleaning shower, grinder or safety sensor they can be accessed by following the next steps.



Warning:

Always disconnect all power to prevent electrical shock before opening the unit!

1. Remove front and if necessary side plating by loosening screws at bottom of each plate. You can then move the plate down and outwards to completely remove it.
The supply water valves, cleaning shower, and safety sensor can now be accessed.
2. Remove the horizontal front bar by lifting and moving outward. Remove the control cabinet by removing the bolts at the sides of the control cabinet and lifting the cabinet up and outwards.
3. Remove the two horizontal bars where the control cabinet was mounted on by releasing the bolts

For maintenance of the grinder see Appendix III .

To assemble the unit, go through the steps in opposite order.

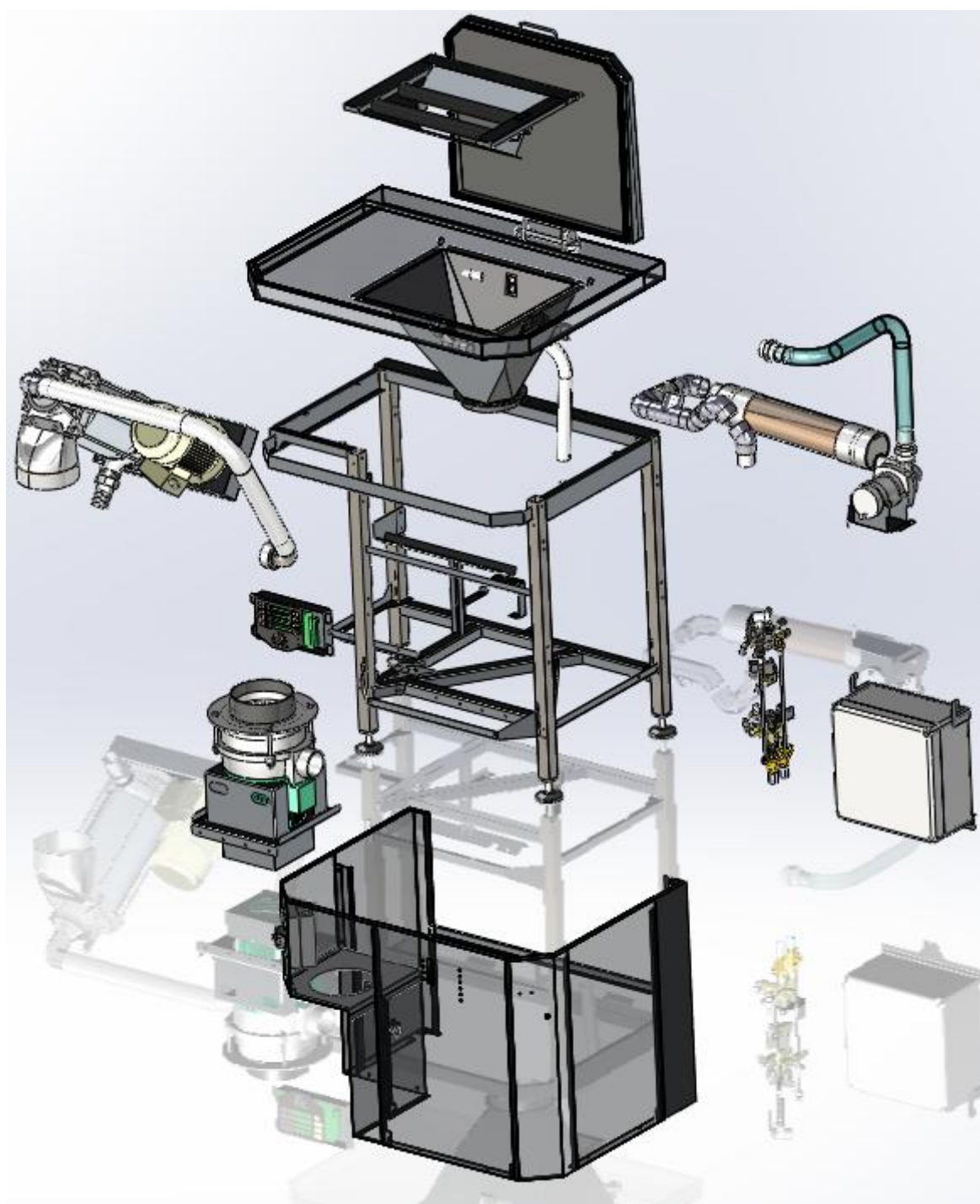


Figure 16 Exploded view Solus

6.3 Access back side free standing unit

**Warning:**

Always disconnect all power to prevent electrical shock before opening the unit!

Only qualified personal (see also 2.3) are allowed to open the back side of the unit by releasing the bolts on the back plating and moving it outwards see also (**Error! Reference source not found.**). The 2-way valve can be disassembled radial by releasing the four M8 bolts. The valve can then be moved radial outwards. In case the backside is not accessible it is possible to disassemble the valve from the front side (see **Error! Reference source not found.**).

6.4 Spare parts list

A list with spare parts can be found in Appendix IV . If you do any questions or need any help you can contact the Rendisk service desk.

Chapter 7 Storage and transport

This chapter provides information on the storage and the transport of the Solus.

7.1 Storage

The unit has to be stored in a clean and dry room with a relative humidity between 10 and 80% at temperatures between -10 and 50 °C.

7.2 Transport

The units can be transported on a pallets or crates. Make sure that all loose items are fixed/fastened. In the case the units are lifted, be aware that centre of gravity of the unit can be out of geometric middle point.

Chapter 8 Dismantling and scrapping

This chapter gives instruction for the dismantling and scrapping of the installation.

8.1 Environmental protection



Caution!

Water-polluting materials

Such materials can pollute the soil and groundwater and enter the sewage system.

Adhere to legal waste avoidance obligations and correct recycling / disposal during all work on and around the machine.

Water-polluting materials such as grease and lubricating oil must not pollute the soil or enter the sewage system, especially during installation, repair and maintenance work.

These materials must be caught, stored, transported and disposed of in suitable containers.

The appropriate valid legal regulations must be strictly adhered to when disposing of operating materials or replacement materials during maintenance or decommissioning of the system.

8.2 Oil, oily waste and greases

Oil, oily waste and greases pose a significant risk to the environment. Therefore, disposal of such materials must be made by a specialist company.

- Collect any oil and oily waste and only dispose of them according to the legal conditions through authorized waste disposal companies / authorities.

8.3 Plastics

- Sort any plastic waste as thoroughly as possible.
- Dispose of plastics according to the legal conditions through authorized waste disposal companies / authorities. The scrapping of the installation has to proceed in compliance with the regulations of the particular country.

8.4 Metals

- Sort and separate different metal types.
- Dispose of these metals according to the legal conditions through authorized waste disposal companies / authorities.

8.5 Electrical and electronic waste



Electrical and electronic waste!

This logo on the packaging or device indicates that the device must be disposed of separately. These devices must not be disposed of with domestic waste.

- Only dispose of electrical or electronic waste according to the legal conditions through authorized waste disposal companies / authorities, e.g. recycling plants.

Appendix I Malfunction list

Appendix II CE IIA declaration

The original will be supplied separately.



EU Declaration of Conformity

Directive 2006/42/EG, Annex II, sub A

Manufacturer : Rendisk BV
: Spoortstraat 62
: 7261AG Ruurlo
: Netherlands

herewith declares that:

Machine : Rendisk foodwaste disposer
Type : Solus Eco Serial nr: PR1300000402

▪ **is in compliance with:**

Machinery Directive 2006/42/EG

▪ **the following harmonized standards have been applied:**

Harmonised standards
 EN 12 100-1 Machine safety: specification for general requirements, part1
 EN 12 100-2 Machine safety: specification for general requirements, part2
 EN 60 204-1 Machine safety: Electrical equipping of machines : general requirements
 EN 61 000-6-2 Electromagnetic compatibility (EMC). Generic standards. Immunity standard for industrial environments.
 2002/95/EC RoHS directive

<u>Managing Director</u> Place : Ruurlo Date : Name : S.J.N. van Langen Signature :	<u>Constructor</u> Place : Ruurlo Date : Name : R.F.J. Hulshof Signature :
--	---

Figure 17 Example CEIIA declaration

Appendix III Maintenance and repair grinder

Jam release

In case the grinder reduces speed, stops or does not start:

- Disconnect electrical power supply (main switch).
- Use protective gloves. Remove any non-grindable object from grinding chamber.
- Place jam release wrench on centre nut so that a shredder grinding blade fits in the recess of wrench (see Figure 18)

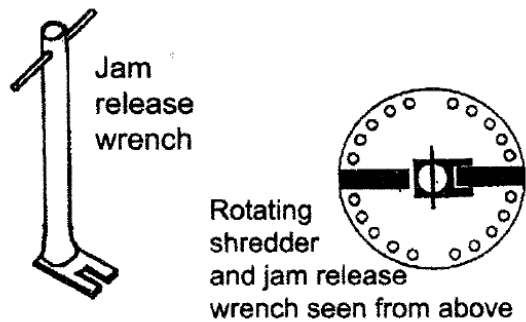


Figure 18 Jam release wrench

- Rotate the wrench backwards and forwards until the shredder rotates freely in both directions. If needed extend the bar on the wrench. Hit the bar with a hammer.

Disassembling grinder

1. Switch the current off
2. Disconnect the grinder cable from the contactor .
3. Loosen the waste water connection from the end shield.
4. Disconnect the grinder (6 screws, with nuts and possible fixing (22)).
5. Turn the grinder up side down to remove the housing (-15). Unscrew the 2 screws (-26). Loosen the cable nipple to allow for free length of cable inside housing. Loosen the strap (-17), 2 nuts (-25) and turn the grinder right side up again.
6. Remove the hood (-16) by loosening the remaining 2 nuts (-25).
7. Remove the stationary shredder (-01) by levering against the large tooth with a crowbar supported against the rotary shredder (-02) near to one of the two shredder blades.
8. Hold the rotary shredder with, for example, a pipe wrench and loosen the axle nut (-07).
9. Remove the rotary shredder (-02). Use two crowbars opposite one another under the outer edge supported against the edge of the end shield (-13).
10. Remove the V-ring seal (-03/01). Loosen the four fixing screws (-23) in the end shield (-13) and lift off. Inspect washer (-03/00) for possible wear caused by V-ring seal and replace washer if necessary.
11. Turn the end shield up side down and dismantle the locking ring (-03/03) by using pointed pliers. Press out the two axle seals (-03/02). Inspect the contact surface of the carrier (-18) for wear caused by the axle seals. Replace the carrier if necessary.
12. Terminate dismantling here when only replacing the stationary and rotary shredders. The V-ring seal (-03/01) and the two axle seals (-03/02, with special grease (-04) together with stationary seals (-05) and (-08) must be replaced with every overhaul.
13. Loosen fixing screw (-18/01). Remove carrier (-18) carefully in order not to damage the motor bearings. If necessary, replace damaged bearings (-14/02) together with the motor axle seals (-14/01).
14. When replacing the motor make sure that the new motor (-14) has the same classification and quality as the original motor (compare rating plates). Drill two holes in the upper motor flange to allow for ventilation and drainage of possible water condensation (see existing motor).

For 1,5kW and 5,5kW motors, the two holes cannot be drilled in the motor flange. Instead, two ventilation holes are drilled into the lower part of the end shield (-13). See existing end shield.

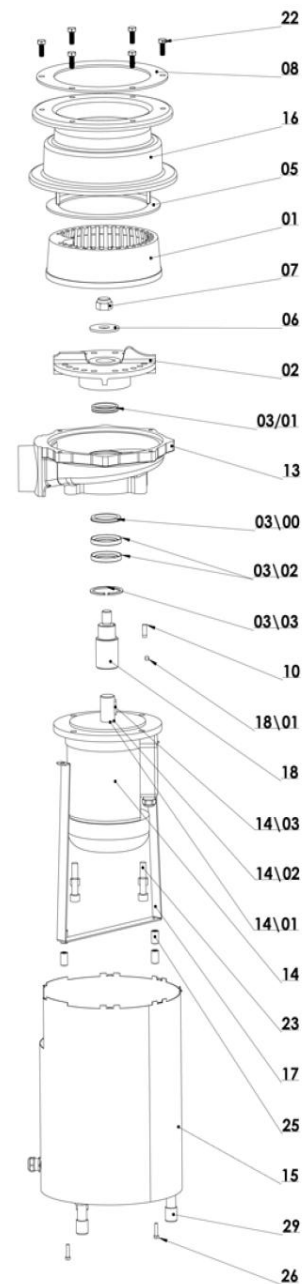


Figure 19 Exploded view grinder

Assembling grinder

15. Clean all components carefully. Assemble in reverse order. Note especially the following.
16. Before pressing the carrier (-18) onto the motor axle, remove the motor fan hood and support the axle at fan end in order to prevent damage to the motor bearings. Mark the depth of hole in the carrier onto the motor axle. Coat the motor axle and the carrier hole with protective grease or sliding lacquer to
17. prevent rusting or jamming. Press the carrier all the way down to the mark on the motor axle. Apply Loctite and tighten the fixing screw (-18/01) through the M6-hole in the carrier.
18. Place washer (-03/00) in the end shield (13). The edge on the outer diameter of the washer shall be nearest to the two axle seals (-03/02). Apply a coat of oil on the outer diameter of the two axle seals (-03/02) to give easier fixing into the end shield. Press the axle seals into position using a tool having the same outer diameter in order that the seals shall not be damaged. The seals shall be placed with the groove and stainless spring upwards towards the grinding unit. The seals are fixed by fitting the locking
19. ring (-03/03) into the groove in the end shield. Grease the axle seals and pack the space between the two seals with the special grease, (-04) supplied by grinder. Grease the sealing face of the carrier (-18) using the same grease before fitting the end shield (-13) with axle seals over the carrier. Care should be taken not to damage the lips of the axle seals.
20. Grease the V-ring seal (-03/01) and washer (-03/00) using grease (-04) from grinder. Fit the V-ring seal over the carrier (-18) with the seal lip against the washer (-03/00).
21. Coat carrier axle (-18) and hole of the rotary shredder (-02) with protective grease or sliding lacquer. Check that the carrier key (-10) is positioned correctly and fit the rotary shredder on the carrier axle. Apply a layer of rubber sealing compound (-09) over joint between shredder and carrier axle. Fit the washer, (-06) and tighten up axle nut (-07).
22. Apply a thin layer of rubber sealing compound (-09) in the seat of the end shield (-13). Position the stationary shredder (-01) with the large tooth at the outlet of the end shield, and press down tightly. Secure the stationary shredder to the end shield by hammering a number of punch marks around the joint between these two articles.
23. Fit the hood (-16) so that its arrow mark is positioned centrally to the waste outlet on the end shield. Secure the hood with the two hexagonal nuts (-25) and turn the grinder up side down. Secure the strap (-17) using the two remaining hexagonal nuts (-25). Tighten alternately these four nuts with an even and moderate pressure to compress the rubber seal (-05). From the inside of the stationary shredder (-01) pull the projecting lip of the seal with a pair of pliers to check that it sits tightly between the hood and the stationary shredder. Alternatively, control with a feeler gauge.
24. When mounting the grinder below sink, working top or freestanding cabinet / trough, check that the machine and assembly are fixed in order to withstand the starting torque of the motor and the expected torque if the grinding unit becomes jammed. A torque protection bar (-28/V) or torque protection clamps (-28/B) can for example be used.

Appendix IV Spare parts list

Please contact Rendisk for the spare parts list