



*Translation of the original instructions*

**RÜHLE - Cutting Centre**

**Type: SR 2 Turbo**

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Changes reserved

# 1 Safety Instructions

!!! Observe the safety instructions during the installation, operation, cleaning and maintenance of the Rühle Cutting Centre!



Hazard potentially causing irreversible injuries if disregarded.



Warning, potentially causing serious injuries if disregarded.



Note



Work on electrical equipment of the machine may only be carried out by qualified technicians!



Always disconnect machine from the mains during this process!



Warning of suspended load.

## 1.1 Safety instructions

!!! A **supervisor** (responsible person) must be appointed for the machine!

This person must:

- a) Completely read and understand these operating instructions before transport, commissioning, setup, operation, cleaning, decommissioning, care / maintenance as well as dismantling / disposal!
- b) Prepare work instructions for the intended and safe transport, commissioning, setup, operation, cleaning, decommissioning, care / maintenance as well as dismantling / disposal!
- c) Make sure that the qualified workers have completely read and understood the respective work instructions according to section 1.1b!

- d) Proper functioning of the protective devices must be checked at least once a year by a Rühle service technician!
- e) Provide personal protective equipment!

All life cycles phases:



Wear foot protection!



Wear hand protection!



Wear protective clothing!

Cleaning; care / maintenance; dismantling:



Wear eye protection!



Use light breathing mask!

!!! The **operator** must operate the machine according to the intended use and strictly observe all points listed in the "Operation" work instructions prepared by the supervisor.

!!! Before putting the machine into operation for the first time and on each working day, the **operator** must check the functionality of the following safety devices:

- a) Visual check for changes or damages on all machine sides and accessible machine parts, e.g. the cut-off knife. The machine must be shut down in the event of any damages or changes!
- b) Check the safety switches as follows:  
Install upper belt section and transport belt, insert protective guard, close the knife protection box, insert the slider and close the funnel with it.
  - Start the machine. - Press the emergency-stop switch. - If the machine has not switched off, it must be shut down immediately!

- Start the machine. - Open knife protection box 20 mm wide. - If the machine does not switched off, it must be shut down immediately!
- Start the machine. - Open the slider of the funnel 20 mm wide. - If the machine does not switched off, it must be shut down immediately!
- Open the knife protection box. -Dismantle the transport belt and upper belt section. - Close the knife protection box. - Start the machine. - If it should start, it must be shut down immediately!

!!! To **shut down** the machine, the emergency-stop switch must be pushed to "Emergency-Stop", the main switch turned to "0 - OFF" and the power plug pulled from the outlet! The machine must be secured against further use!

!!! The **supervisor** must arrange for the repair of the non-functional safety device by a Rühle service technician. Until the corresponding parts have been repaired, the supervisor must ensure that the machine or parts of the machine are under no circumstances put into operation!

!!! The **cleaning personnel** must observe the work procedures from the "Cleaning" work instructions prepared by the supervisor.

!!! The **maintenance personnel** may only carry out work specified as "Regular care", unless any other authorisation has been issued in writing by the manufacturer of the machine. The maintenance personnel must observe the work procedures from the "Maintenance" work instructions prepared by the supervisor.

The power plug must be disconnected for maintenance work!

!!! The machine may not be modified.

!!! Only Rühle spare parts and accessories may be used.

!!! The operating instructions as well as all other technical documents included must be supplied completely when reselling the machine.

## 1.2 Remaining risk of accidents

!!! All life cycles phases



Damaged knife elements must be replaced!

Cut protection gloves must be worn when working:

- on the open knife protection box,
- on the cut-off knife,
- on the grate knives of the knife levels,
- in the funnel, e.g. to remove product.



Reaching into the machine or the funnel during operation is strictly prohibited!

Any manipulation and bypassing of the safety devices is strictly prohibited!



Staying under the lifting aid is strictly prohibited!

When moving the lifting aid for unloading it must be remembered that the upper box may not be lifted above the worktable height!



If the machine is unattended, the knife protection box must be closed before leaving the workplace, the lifting aid moved to its top position and the fork folded onto the worktable!



When processing very watery products, spraying from the funnel may occur in spite of installed slider! With such product it is recommended to stand to the side of the funnel when the machine starts.

!!! Maintenance



The machine must be disconnected from the mains when performing maintenance work!



The protective covers may be removed only while performing maintenance (control cabinet, side cover, etc.)!

### **1.3 Intended Use**

The cutting centre may only be used to cut non-frozen foodstuff into cubes, strips and slices. Special accessories are required for chop slices! The max. room temperature may be 12 °C for reasons of food hygiene!

This machine may not be operated by persons under the age of 18!



Claims of any type because of damages due to non-intended use are ruled out!

#### **Misuse:**

- Any use other than the one listed above is strictly prohibited and is considered misuse!
- Operating the machine in explosion hazard areas is prohibited!
- Handling / processing products and materials not belonging to food products is prohibited!
- Handling / processing of products containing bones, with the exception of chop slices, is prohibited!
- The lifting aid may only be used for the Euro standard boxes provided and which are stacked on a suitable undercarriage; it must not be overloaded! Lifting of persons is strictly prohibited!

## **2 Installation instructions**

Installation and commissioning of the machine may only be carried out in the presence of a Rühle service technician or by persons authorised by Rühle.

Rühle GmbH Lebensmitteltechnik shall not be liable for any damage resulting from non-compliance with these operating instructions.

## 2.1 Machine transport and setup

Please refer to the short instructions supplied with the machine regarding transport and setup of the cutting centre.



The machine and machine parts must be transported by 2 persons (1× operator of floor conveyor / 1x transport supervision).

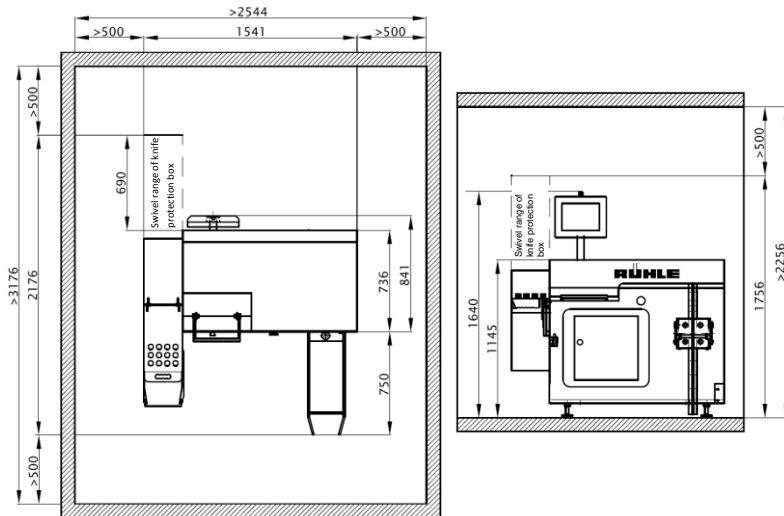
The power supply line must not be damaged by driving over or pinching it!

The machine must be decommissioned until a damaged power supply line has been repaired!



Make sure the machine is stable!

## 2.2 Workplace description



The work area around the machine is at least 0.5 m on all sides; for maintenance work it is at least 1 m; if used as passage way, it is at least 1.2 m.



## 2.3 Connecting the machine

The machine is connected to a three-phase current outlet; its data (voltage, amperage) must agree with the specifications on the type plate of the machine.



The machine must be decommissioned until a damaged power supply line has been repaired!

The power supply line must be regularly checked!

Check the correct rotational direction of the machine by starting it. A message appears on the display in case of incorrect rotating field!



- In such a case, an electrician must change the direction of rotation inside the mains plug.



- The power supply to the machine must be fuse-protected with 16A secured with an AC/DC sensitive ground-fault circuit interrupter (type B).

## 3 Operating instructions

Please refer to the short instructions supplied with your machine for the operation of your cutting centre.



Follow also the safety instructions in Chapter 1.1!



In its respective life cycle phases (transport, commissioning, setup, operation, cleaning, decommissioning, care / maintenance, dismantling / disposal) this machine is designed for 1-person operation!

When using this machine, no other person may be present near the machine. The exception (2-man operation):

- Transport of machine and machine parts
- Commissioning
- Maintenance activities



The machine may not be commissioned without transport belt!

The following is strictly prohibited and anyone disregarding this prohibition acts gross negligently when:

- Lifting the lamellae of the protective guard on the knife protection box during operation and reaching into the cutting chamber!
- Operating the machine without rear wall or tool magazine!
- Manipulating the protective devices of the machine or deactivating them!

Working on the machine without the rear wall installed or without the tool magazine installed is permitted only for a Rühle service technician during maintenance!



The operator must make sure that

- No persons, who do not know the hazards of the machine or cannot anticipate them, are about in the area of the machine!
- When loading the lifting aid, the Euro boxes must be stacked on an undercarriage suitable for this purpose and moved with it onto the lifting aid to ensure the Euro boxes are held securely!
- The upper box on the lifting aid is not lifted higher than the worktable!
- The feather key is placed in the guide groove when installing the transport belt!



The control panel may only be operated by touching it with the fingers. Using any objects (e.g. blade) is prohibited!

The self-lubrication control function must be activated by a Rühle service technician or person authorised by Rühle prior to initial commissioning!

After each change of the cut-off knife or grate the cut-off knife must be turned clockwise 2 times by means of the handle nut to ensure that it does not collide with the grate frame or the knife levels!

Observe the display information!

## **4 Cleaning instructions**

The cutting centre has been designed to allow for complete cleaning of all parts that come into contact with the food product.

### **4.1 Safety instructions**

- Follow also the safety instructions in Chapter 1.1!
- The cleaning staff must notify the supervisor immediately of any defects on the machine!
- The cleaning staff must use the specified cleaning agents and disinfectants!
- Germ reduction is achieved only by correct cleaning and subsequent disinfection!
- Appropriate material (e.g. brushes, rags, ...) is required and must be provided for the proper procedures of the above!
- Cleaning products and disinfectants approved for the food product area and suitable against contamination (e.g. protein, lime-scale, ...) must be used!
- The cleaning agents and disinfectants must be prepared to a solution as described in the product data sheet of the manufacturer!
- Personal protective equipment must be worn!



#### **Cleaning with high-pressure cleaners**

is permitted only for:

- all outside surfaces,
- inside of the knife protection box,
- tool magazine,
- (working) funnel,
- cutting chamber and
- transport belt

The control panel must be cleaned manually and may not be exposed to a water jet!



All other parts and surfaces may be cleaned only with normal water pressure!

## 4.2 Cleaning agents and disinfectants

The following cleaning agents and disinfectants must be used:

Cleaning agents:	Alkaline cleaning:	P3 - topax 12, P3 - topax 19, P3 - topax 66
	Acidic cleaning:	P3 - topax 56
Disinfectants:		P3 - topax 91, P3 - topax 99
Supplier:		Henkel Hygiene GmbH Bonner Str. 117 D-40589 Düsseldorf Tel.: +49 211-9893-0

Or:

Cleaning agents:	Alkaline cleaning:	Simplex F fat solvent
	Acidic cleaning:	Simplex foam, acidic
Disinfectants:		Tego 2000, Tego IMC
Supplier:		Th. Goldschmidt AG Goldschmidtstr. 100 D-45116 Essen Tel. +49 201-1730-1

## 4.3 Cleaning procedure

Please refer to the short instructions supplied with your machine for carrying out the cleaning procedure.



The transport belt may only be dismantled after the cut-off knife was removed from the machine!

### **Cleaning preparations:**

- To ensure optimum cleaning, some components of the machine must be removed.
- On the control panel first start the "Cleaning position" program under Service programs to move the die plate to the cleaning position.

- Remove any objects lying on the machine.
- Remove the undercarriage with the Euro boxes from the lifting aid and from beneath the cut meat discharge.
- Remove the slider (funnel closure).
- Remove the die plate.
- Open the knife protection box.
- Unscrew the handle nut.
- Remove the cut-off knife and the grate frame with the knife levels.
- Remove the transport belt. Proceed as follows:
  - Open the quick-action tape clamp by jerking it upward and then fold it onto the belt frame.
  - Reach with one hand under the belt to the feather key. Lift it from the guide groove and remove the transport belt.
  - Remove the upper belt section.
- Open the tool magazine and remove the objects it contains (grate, knife levels, stabilisers and possibly the knife sharpener).

## **5 Service: Care, maintenance, repair**

Any work related in any way with service may be carried out only by Rühle service technicians and by persons authorised by Rühle in writing. In this regard, a distinction is made between regular care and maintenance and repair. The respective qualification certificate must be issued explicitly for the corresponding work.



Follow also the safety instructions in Chapter 1.1!



Notify and obtain permission from Rühle customer service if welding or cutting work is required on the machine!

Wear cut protection gloves when working on the blades!



Reaching into the inside of the machine by opening the side covers is strictly prohibited when performing work activities of "Regular Care"!



Make sure when working on the electrical equipment of the machine that



- this is only done by qualified personnel!
- the machine is always disconnected from power!

## 5.1 Regular care

Regular care of the machine must be carried out at least once per week. This prevents malfunctions and signs of wear.

Any abnormalities detected during regular care must be reported to the supervisor! He must immediately initiate correction or maintenance or notify Rühle Service!

### Care schedule:

- a) Disassemble the machine according to the cleaning instructions. Check for any parts moving with difficulty, material abrasion or other signs of wear and tear.
- b) Remove the cut-off knives with the knife sharpener and check them for any damage or broken blades.
- c) Sharpen the grate knives in the knife levels with the knife sharpener and check them for any damage or broken blades.



Grate knives must be resharpened at least every 50 working hours on a slip-resistant underlay using only little pressure and a Rühle knife sharpener!

- d) Check the slider (funnel closure) and its guide pins for damages and abrasion; remove sharp edges!
- e) Check the guide rails of the slider (funnel closure) in the machine and the grate frame; remove sharp edges!
- f) Check the rollers of the eccentric shafts (drive shaft for the knife level) and of all grate frames:
  - a. For easy running and axial play!
  - b. For abrasion (plane surfaces)!
 ⇒ Replace defective rollers!

- ⇒ In case of abrasion, check the corresponding sliding surface on all knife levels for damages!
- ⇒ Replace defective knife levels!
- g) Visually check for changes or damages on all machine sides and accessible machine parts, e.g. the knife levels. The machine must be shut down in the event of any damages or changes!

## **5.2 Regular maintenance**

Regular maintenance of the machine must be carried out every 2000 hours of operation but at least once per year.

### ***Maintenance schedule:***

- a) Inspect the safety devices as outlined in Chapter 1.1 Safety Instructions!
- b) Test run with open machine (caution: moving parts)!
- c) All inspection activities and sharpening tasks specified under "Regular Care"!
- d) Check the filling level of the lubricant dispenser and replace, if necessary!
- e) Check the synchronism of the eccentric shafts; adjust if necessary!
- f) Check the distance between cut-off knife and grate frame; adjust if necessary!
- g) Inspection of the main coupling and freewheeling bearings!
- h) Inspection of pre-pressing mechanism!
- i) Inspection of the linear drive for feed setting!
- j) Check radial shaft seals for leak tightness; replace otherwise!
- k) Grease all lubricating nipples and moving parts in the machine compartment!
- l) Read operating hours and error log on the control panel and examine any faults that have occurred!
- m) Read the error memory (frequency converter)!

## **5.3 Repair and spare parts**

As a damaged part on a machine is usually damaged due to causes unrelated to the part, always carry out a fault diagnosis.

For this reason, contact our Service Hotline at +49 7748-523-11 for spare parts or technical faults. Please keep the machine type and number ready.

## **6 Disposal**

1. The following components contain oil:
  - Main drive for cuttingDispose of the oil properly!
2. The following components contain lubricating grease:
  - DC drive for the pre-pressing function
  - Free-wheeling rollersDispose of the lubricating grease properly!
3. The following components contain lubricating oil:
  - All chains and their gearDispose of the lubricating grease properly!
4. All other materials must be sorted and disposed of at a recycling facility!

## **7 Technical documentation**

### **7.1 Technical data**

Connection voltage:	400 V 50 Hz 3-phase AC / N / PE
Power consumption:	5.1 kW
Full-load current:	10.6 A
Back-up fuse max.:	16 A
Protection class:	IP54
Ambient temperature:	+2 °C to + 40 °C



Cut product temperature:	-5°C to + 80°C
Dimensions, W × H × D:	1541 × 1756 × 2176 mm
Funnel size:	120 × 120 × 500 mm
Cut-off length:	0,5 - 32 mm
Cutting speed:	160/320 sections/min
Cutting output max.:	3000 kg/h
Size of knife level to	
grate frame 5x:	5, 10, 15, 20, 30, 40, 60 mm
grate frame 6x:	6, 12, 24, 30, 60 mm
grate frame 8x:	8, 24, 40 mm
Approved Euro boxes:	E1, E2, E3
Machine weight:	850 kg
Transport weight:	950 kg
Lifting aid, load capacity:	120 kg
Emission sound pressure level:	62.5 dB(A) averaged, when idling accuracy class 2, as per EN ISO 3744: 2010
Measuring instrument:	Brüel & Kjær Type 2240

The data on the type plate principally applies; it is located on the back of the machine. In case of deviations contact the manufacturer for a written confirmation of the data!

If your country requires a ground fault circuit interrupting device as protective measure, a ground fault circuit interrupting device (type B), AC/DC sensitive, must be used.

## ***7.2 Electrical circuit diagram***

The electrical circuit diagram of your machine is located in the electrical control cabinet and must be supplied when reselling the machine!

## 8 EC Declaration of Conformity according to Directive 2006/42/EC

The manufacturer herewith declares		that the following product	
Name:	Rühle GmbH	Type:	SR 2 Turbo
Legal form:	Lebensmitteltechnik	Designation:	Cutting Centre
Address:	Beim Signauer Schachen 10 D - 79865 Grafenhausen	From series no.:	0456

complies with all relevant provisions of the directive indicated above, including any changes to it that are valid at the time of the declaration.

The product complies with all relevant provisions of the following additional EU Directives and standards, including any changes to these that are valid at the time of the declaration:

- DIN EN 1672-2: 2009-07 Food processing machinery – Basic concepts - Part 2: Hygiene requirements
- DIN EN 60204-1: 2007-06 + A1: 2009-10 Safety of machinery - Electrical equipment of machines - Part 1: General requirements
- DIN EN 13871: 2011-02 Food processing machinery – Cubes cutting machinery - Safety and hygiene requirements
- EC 1935/2004 Regulation on materials and articles intended to come into contact with food.

### Appointed department:

Name, legal form: DGUV Test Prüf- u. Zertifizierungsstelle  
Fachbereich  
Nahrungsmittel  
Address: Dynamostraße 7-11  
D-68165 Mannheim  
Identification number: 0556

### Reason for the involvement of the appointed department:

Type testing

### Signed by:

Place of issue: D-79865 Graf-  
enhausen  
Date of issue: 01/07/2011  
Function of the signing person in the company: Management  
Name of the signing person: Mr. Claus Rühle

### Person authorised for the documentation:

Name: Jürgen Stegerer  
Address: Rühle GmbH  
Beim Signauer Schachen 10  
D-79865 Grafenhausen

Signature:

