

Operating Manual

for

the semi automatic

High-Tech-Cutter

SR1 and SR1 turbo

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1. Safety Instructions

!!! The safety instructions have to be observed during the installation, operation, cleaning and servicing of the Rühle High Tech Cutter type SR 1 and SR1 turbo.

1.1 Safety hints

!!! The operating manual has to be read by the supervising personal before installation, operation, cleaning or servicing. The supervising personal has to make sure, that the operator as well as the persons cleaning and servicing the machine, have read and understood the operating manual.

!!! The operator has to operate the machine as directed and strictly pay attention to all points of the operating manual. The supervisor has to write an instruction for the intended use of the machine.

!!! Before starting up the machine, the operator has to check the functionality of the following safety devices on a day to day basis:

- A. Visual control on all sides of the machine for changes or damage. In case of changes or damage, the machine has to be shut down.
- B. Close the door to the cutting area – lock discharge funnel inside the cutting area door – start the machine – open the cutting area door 20 mm. Should the machine not stop it has to be shut down immediately.
- C. Close the door to the cutting area – close process shaft – start the machine – open the process shaft. If the machine doesn't stop, it has to be shut down immediately.
- D. Lock the brakes of the casters at the back. – Try to move the machine by pushing it. – Select a different location if the machine moves and shut the machine down immediatly should the new location result in movement again

To shut down the machine, the main switch has to be turned to position "0". Additionally, the main switch has to be secured by a pad lock. The key has to be handed over to the supervisor. The mains plug has to be disconnected from the power outlet.

!!! The supervising personal has to make sure, that the malfunctioning safety devices are repaired by a Rühle technician. It's the supervisors responsibility, that the machine isn't used under any circumstances until the repairs have been carried out.

!!! The cleaning personal has to observe the cleaning instructions.
The supervisor has to write instructions for a safe cleaning procedure.

!!! The maintenance personal is only allowed to service the machine within the guidelines of "regular maintenance 5.1" unless written permission has been given by the manufacturer to do otherwise. The supervisor has to write instructions for safe maintenance works.

!!! It's not allowed to modify the machine.

!!! The supervisor has to make sure, that the functionality of the safety devices is checked every 2000 working hours, but at least once a year by a Rühle service technician.

!!! Only Rühle spare parts and accessories are allowed to be used.

!!! The resale of the machine includes the handing-over of the complete operating manual.

1.2 Safety data sheet

The feeder shaft lock, the product discharge, the box and lifting system as well as the electronic equipment correspond to the draft of the European Standard pr EN XXX "Cutting machines for cubes", edition 3/1998.

This machine is not fitted with an emergency-STOP device, because there is no risk for the operator and the product. The OFF-sensor on the operating panel is within easy reach from the operating area.

CE – Conformity declaration

The fully automatic High-Tech-Cutter of the Type SR1 and SR 1 turbo corresponds to the following safety and health requirements:

- a. EU – Machine guideline 89 / 392 / EWG and 91 / 368 / EWG
- b. prEN 1672-2: 1992 Food machines, safety and hygiene requirements
Part 2: Hygiene requirements February 1995
- c. EN 60204-1: Electrical equipment of machines
Part 1: General regulations
- d. Rühle - Documentation



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Baumusterprüfbescheinigung

96037

Bescheinigungs-Nummer

Name und Anschrift

des Bescheinigungsinhabers: RÜHLE GmbH
(Auftraggeber) Beim Signauer Schachen 10, 79865 Grafenhausen

Name und Anschrift

des Herstellers: RÜHLE GmbH
Beim Signauer Schachen 10, 79865 Grafenhausen

Zeichen des Auftraggebers:

MR-ga

Zeichen der Prüf- und Zertifizierungsstelle:

660.522.1/242 Eb/H-

Ausstellungsdatum:

10.07.1998

Produktbezeichnung:

Schneidemaschine mit Vorschubstempel, Gatter und Sichelmesser
"Schneiderlein"

Typ:

SR 1

Bestimmungsgemäße

Verwendung:

Prüfgrundlage:

Grundsätze für die Prüfung der Arbeitssicherheit von Fleischereimaschinen
(GS-FW-01/01) (1.1991)

prEN... Nahrungsmittelmaschinen "Würfelschneidemaschinen"

Sicherheits- und Hygieneanforderungen

Entwurf: September 1995

Bemerkungen:

Das geprüfte Baumuster entspricht den einschlägigen Bestimmungen der Richtlinie 89/392/EWG (Maschinen), geändert durch die Richtlinien 91/368/EWG, 93/44/EWG und 93/68/EWG.

Diese Bescheinigung wird spätestens ungültig am:

31.12.2001

Weiteres über die Gültigkeit, eine Gültigkeitsverlängerung und andere Bedingungen regelt die Prüf- und Zertifizierungsordnung vom Januar 1993

Unterschrift (Dipl.-Ing. E. Eberlein)



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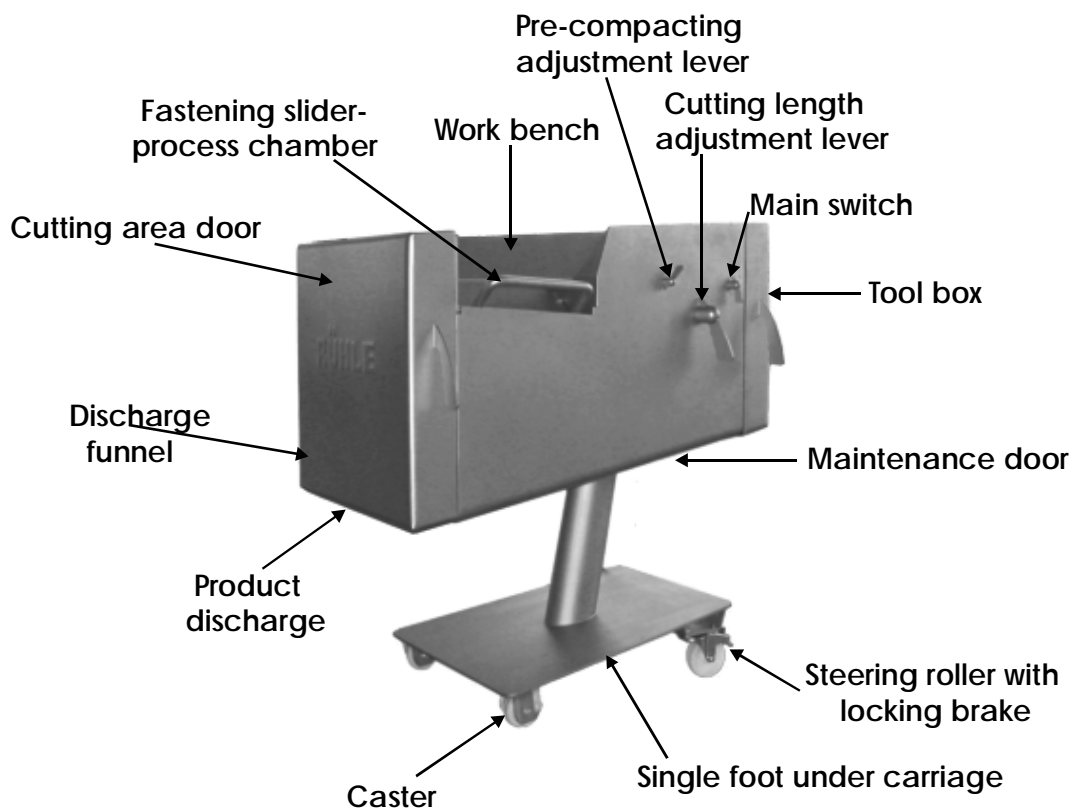
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2. Installation instruction

Installation and commissioning of the machine should only be carried out in presence of a Rühle service technician.

The Rühle limited liability company is not liable for damages caused by violation of these instructions.

The transport of the machine has to be carried out according to the operating manual.



2.1 Machine installation

For the transport and delivery the machine is equipped with two casters at the front and two steering rollers with a locking brake each at the back.

For a safe transport the brakes have to be unlocked. The operator moves the machine in the desired direction by pushing and steering it from the back with the hands holding on to back with the hands holding on to the top.

No persons or objects should be near or in front of the machine during transport.



During the **installation and transport of the machine** see to it that the floor can withstand a load of 400 Kg/m². The machine has to be positioned in such a way that a passable safety path of one meter in width is all around the machine.

No objects, which could change the centre of gravity or the total weight should be lying on the machine during transport.

The two locking brakes have to be engaged once the desired process location has been reached.

Check the structure and the slope of the floor in order to guarantee a save position of the machine.



The machine has to be positioned in such a way, that there is an unrestricted ceiling height of at least 2,30 m so that the operator has an unrestricted working area above the machine.

2.2 Connection of the machine

Before connecting the machine to the mains, make sure that the power outlet is dimensioned according to the machine datas. The High-Tech-Cutter SR1 and SR1 turbo is standard equipped with a connected load of 400 V / 50 Hz / 16 A / 1,5 kW.

These values can vary, so take the values from the data plate, positioned at the back of the machine, before finally connecting the machine.

After an electrician has fitted a suitable power plug to the power lead, the machine can be supplied with power by connecting the lead to the power point.

Turn the main switch from "0" to "1" to turn on the machine.

Should it be impossible to start the machine despite locking all safety devices, then the rotang field has to be changed by an electrician by changing over the two black leads inside the power plug.



2.3 Commissioning of the machine

The operating manual has to be read and understood before commissioning the machine. This is followed by cleaning and disinfecting of the machine according to the cleaning instructions.

All accessories have to be checked for visible damage – a possible cause of the transport – during the cleaning process. The same applies for the entire machine, especially the safety devices

Switch ON the machine by turning the main switch to „1“. Open the tool box. Now clean and disinfect the entire tool box according to the cleaning instruction. Now clean and disinfect all HighTech-cutters and hang them into the tool box.



Now the main switch has to be turned to "0" so that the Rühle technician can **activate** the six **Self-lubricating** systems inside the machine.

After turning the machine on the main switch on again, the first test-run can be carried out, by selecting the desired cutting program and inserting the relevant Multi-cutter into the machine.

3. Operating instructions

3.1 *Switching on the machine*

To start the machine.....

.....the main switch has to be turned to position "1"

.....a trolley with a box has to be pushed under the cutting area door.

.....the discharge funnel has to be installed inside the cutting area door.

.....with a Multi-cutter installed, the shaft slider and the cutting area door have to be closed.

.....The "ON" key on the operating panel has to be activated.

Now the machine can be started, provided, that the Multi-cutter, prescribed in the cutting program, has been inserted.

3.2 *Cutting preperation*

The machine has to be adjusted to the product prior to the cutting process. The adjustment consist of inserting the correct multi grid combination, choosing The right cutting length (forward feed length) and the best pre-compacting Pressure. Pre-compacting has the funktion to press the product into a compact Block inside the process chamber before the actual cutting process. Each product Can only sustain a certain amount of pressure without beeing damaged.

Cutting Length:

With the forward feed adjusting lever it is possible to choose cutting lengths between 1 mm and 30 mm.

To adjust the length the lever has to be pulled away from the machine and turned to the desired position.

Releasing the lever lets it slide back on to the machine again.



Pre-compacting:

A simple rotary motion brings the pre-compacting adjusting lever to the desired position
from 0
(no compacting Pressure)
to 10
(highest compacting pressure)



3.3 Cut adjustments

To vary pre-set cutting parameters it requires a great deal of cutting experience as well as a sound knowledge of the machine in order to achieve the best cutting result without the machine suffering any damage.

That's why a variation of pre-set cutting parameters should only be changed after a written confirmation by the Rühle GmbH. The best product adjustment is achieved with the help of a Rühle service technician.

There is a choice of different adjustment variables for each product, taking different cut-sizes and different cut goods into consideration.

It has to be considered however, that only those produkt parameter combinations can be used, for which the HighTech-cutter has been supplied.

The existing adjustments:

Adjustment: Back bacon

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cold 0°C	6	6	6,0	4
2	Pork	cold 0°C	8	8	8,0	4
3	Pork	froz.-2°C	6	6	6,0	4
4	Pork	cold 2°C	6	6	6,0	2
5	Pork	warm 30°C	6	6	6,0	0

Adjustment: Streaky bacon

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cold 0°C	6	6	6,0	4
2	Pork	cold 0°C	8	8	8,0	4
3	Pork	froz.-2°C	6	6	6,0	4
4	Pork	cold 2°C	6	6	6,0	2
5	Pork	warm 30°C	6	6	6,0	0

Adjustment : Bacon

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cool 4°C	0	6	3,0	2
2	Pork	cool 4°C	60	12	3,0	2
3	Pork	cool 4°C	6	6	6,0	4
4	Pork	cool 4°C	10	10	10,0	4

Adjustment: Meat cut into stripes

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cold 0°C	60	12	6	4
2	Pork	cool 4°C	60	12	8	4
3	Beef	cold 0°C	60	12	8	6
4	Beef	froz.-2°C	60	12	8	4
5	Veal	cold 0°C	60	12	10	4
6	Veal	froz.-3°	60	12	12	4
7	Turkey	cold 0°C	60	12	10	2
8	Venison	cool 4°C	60	12	10	4

Adjustment: Bierschinken

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cool 4°C	24	24	24,0	4
2	Pork	froz. - 3°C	24	24	20,0	2
3	Beef	cold 0°C	24	24	20,0	4
4	Venison	cold 0°C	24	24	18,0	2

5	Pork	cold 0°C	30	30	30,0	4
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Adjustment: Inlay meat

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cool 4°C	6	6	6,0	6
2	Pork	cool 4°C	12	12	12,0	6

Adjustment: Goulash

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cool 4°C	24	24	24,0	2
2	Beef	cool 4°C	24	24	24,0	4
3	Pork	cool 4°C	12	12	12,0	4
4	Beef	cool 4°C	12	12	12,0	2

Adjustment: Meat salad with mayonnaise

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Lengthmm	Pre-Comp
1	Pork	cool 4°C	0	6	2,0	2
2	Pork	cool 4°C	30	6	3,0	2
3	Pork	cool 4°C	6	6	6,0	2
4	Pork	cool 4°C	60	6	3,0	2

Adjustment: Meat salad

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cool 4°C	0	6	2,0	2
2	Pork	cool 4°C	30	6	3,0	2
3	Pork	cool 4°C	60	6	3,0	2

Adjustment: Boiled ham

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cool 4°C	24	24	2	2
2	Pork	cool 4°C	12	12	2	2
3	Pork	cool 4°C	10	6	6,0	2
4	Turkey	cool 4°C	6	10	10	2

5	Pork	cool 4°C	60	6	6,0	2
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Adjustment: Liver/Heart/Kidney

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cool 4°C	24	6	3,0	6
2	Pork	cool 4°C	12	12	12	4
3	Pork	cool 4°C	24	24	4,0	2

Adjustment: Tribe/Lung

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Beef	cool 4°C	30	30	10,0	6
2	Beef	cool 4°C	60	60	3,0	2
3	Pork	cool 4°C	60	6	3,0	6

Adjustment: Pork head

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cool 4°C	12	12	12,0	2
2	Pork	warm 30°C	12	6	6,0	0

Adjustment: Vegetables

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Gherkin	Raw	0	6	3,0	6
2	Carrots	stewed	30	6	3,0	6
3	Onions	raw	6	6	6,0	6
4	Onions	Raw	10	10	6,0	6
5	Carrots	Stewed	30	15	3,0	4
6	Onions	raw	0	0	2,0	4

Adjustment: **Schnitzel** (without sectioning blade, install bottom Multi-cutter.)

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cool 4°C	10	0	10,0	0
2	Pork	froz. -3°C	10	0	10,0	0

Adjustment : **Roulades** (without sectioning blade, install bottom Multi-cutter.)

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cool 4°C	6	0	10,0	2
2	Beef	cool 4°C	6	0	6,0	2
3	Veal	cool 4°C	6	0	6,0	2
4	Turkey	cool 4°C	6	0	6,0	2

Adjustment: **Cordon Bleu** (without sectioning blade, install bottom Multi-cutter.)

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cool 4°C	10	0	10,0	6
2	Beef	froz. -3°C	6	0	3,0	6

Adjustment: **Steak** (With sectioning blade and Multi-cutter frame.)

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cool 4°C	0	0	10,0	0
2	Beef	cool 4°C	0	0	10,0	0

Adjustment: **Cutlets** (with cutlet blade and Multi-cutter frame.)

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Pork	cool 4°C	0	0	15,0	6

Adjustment : Salami

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Lengthmm	Pre-Comp
1	Pork	cool 4°C	12	12	4,0	6
2	Pork	cool 4°C	24	24	4,0	6

Adjustment: Ochsenmaul

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length	Pre-Comp
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					mm	
1	Pork	cool 4°C	0	0	2	0
2	Pork	froz. -3°C	0	0	2	0

Adjustment: Cheese

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	hard	soft	12	60	3,0	6
2	hard	soft	12	12	12	6
3	soft	hard	12	60	6,0	6
4	soft	hard	10	10	6,0	6
5	hard	soft	6	60	3,0	4

Adjustment: Potatoes

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Carrots	cool 4°C	12	12	10	6

Adjustment: Fondue Chinoise

Nr.	Material	State	Multi-cutter Bottom/mm	Multi-cutter Top/mm	Length mm	Pre-Comp
1	Beef	froz. -3°C	0	0	1,0	0
2	Porc	froz. -3°C	0	0	1,0	0

3.4 The Multi-cutter

The Multi-cutter determines two out of the three dimensions of the cube or stripe.

The size of the cutting dimension is in mm, which means that the distance between two adjacent knives is x mm.

The following cut-sizes are available for the High-Tech-Cutter:

5 mm x 5 mm, 6 mm x 6 mm, 8 mm x 8mm, 10 mm x 10 mm, 12 mm x 12 mm, 16 mm x 16 mm
20 mm x 20 mm, 24 mm x 24 mm, 30 mm x 30 mm, 32 mm x 32 mm, 40 mm x 40 mm,
60 mm x 60 mm.

Because the two dimensions are determined by the composition of two Multiplex-cutter-halves, it is possible to achieve all sorts of combinations like 6 mm x 60 mm.

A Multi-cutter consists of:

A HighTech-cutter frame on which all HighTech-cutter parts are mounted and the frame itself is attached to the machine.

The Multiplex-cutter-half Top is marked with O (Over) and, as the second cutting stage, moves one plane of knives.

The Multiplex-cutter-half Bottom is marked with U (Under) and, as the first cutting stage, moves one plane of knives.

Product stabilizers which keep the product in place while the knives are cutting



A Multi-cutter doesn't always have to be composed of all the single parts. If, for example long stripes are required, the Multiplex cutter Bottom is not needed and therefore the stabilizers are not mounted either.

In case of a very hard product like smoked ham or cheese there is no need for the stabilizers as well.

The two Multiplex-cutter-halves are in all cases mounted in such a way, that the Multiplex cutter half bottom represents the bigger cut size and the Multiplex-cutter-half Top the smaller one.

3.4.1 HighTech-cutter selection

This operating manual contains the correct grid selection for SR 1 and SR 1 turbo.

For the selection of the HighTech-cutter frame the following applies: Always select the frame with the smallest number of slits. This results in the best cut.

Of course it is possible to take a HighTech-cutter frame with lots of slits.

Because a soft product is processed in this example and a Multiplex-cutter-half bottom is used, it is possible to use product stabilizers.

3.4.2 HighTech-cutter assembly

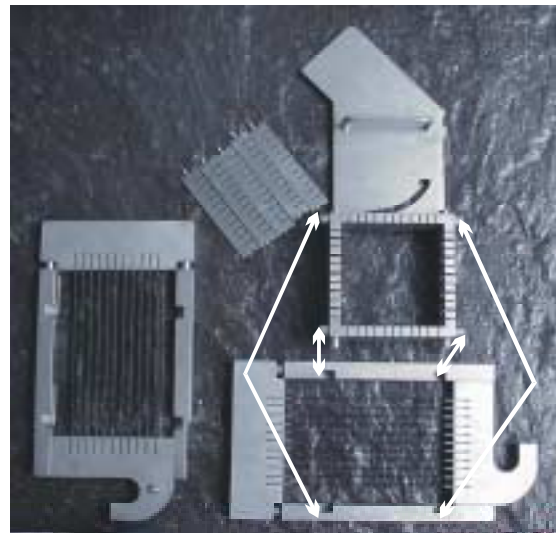
The operator assembling the Multi-cutter has to wear protective gloves against cuts and stabs.

A. At first all necessary Multi-cutter parts have to be put on a table with a non slippery surface.

Only use as many product stabilizers as determined by the Multiplex-cutter-half bottom. Is there provision for only one knife, only put one knife on the table, never more.

Check the knives for damage and bluntness without touching them with the hands.

Only if all parts don't show any signs of wear and tear it is allowed to assemble the Multi-cutter.



B. Put the bottom Multiplex cutter half with the knife-edge facing down on to the bottom four rollers of the Multi-cutter frame. Slide the Multiplex-cutter half along the rollers until all four rollers have engaged. The hook of the Multiplex-cutter-half has to be on the right hand side.

C. Now the product stabilizer(s) have to be inserted into the Multi-cutter frame from the side, on top of the knives of the bottom Multiplex-cutter-half. The stabilizers are inserted so far, that they are not protruding on either side of the Multi-cutter frame. In case of no Multiplex-cutter-half bottom, no product stabilizer is inserted. This applies also, when there is no stabilizer support in the Multi-cutter frame.

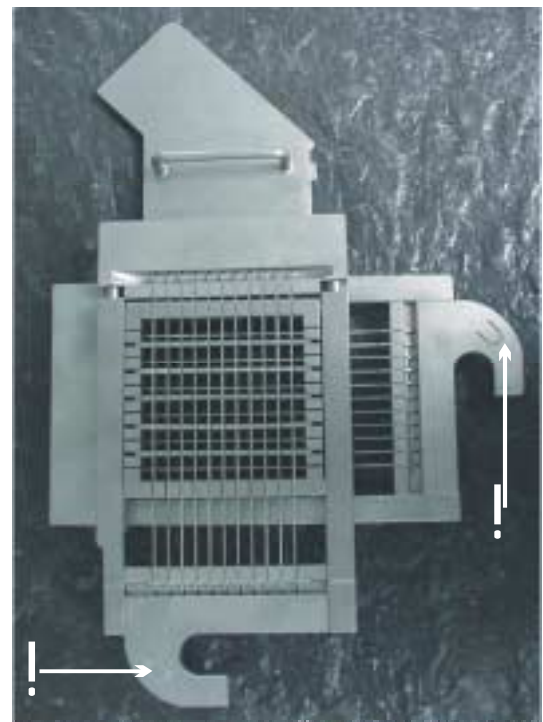


D. Now the Multiplex-cutter-half top is put on to the top four rollers of the Multi-cutter frame. Slide the Multiplex-cutter-half along the rollers, until all four rollers have engaged.

Take note that the Multiplex-cutter-half marked with "U" lies behind the Multiplex-cutter-half marked with "O".

To dismantle the Multi-cutter after a cutting process, it is necessary to follow the steps described under A – D in reverse order.

The handle on the Multi-cutter allows the operator to lift it slowly with one hand in order to attach the Multi-cutter to the machine.



3.4.3 HighTech-cutter installation

Only install the Multi-cutter, which is nominated in the desired cutting program. The operator has to wear protective gloves against cuts and stabs while working in the cutting area.

A. Open the processing shaft and remove the shaft slider by sliding it diagonally out of the guides on the side.



B. Turn the blade away from the cutting area, so that the tip of the blade points to the floor.

C. Before sliding the Multi-cutter into the Multi-cutter fastener, it has to be inserted into the sector of the sheet metal as high up as possible. Now the Multi-cutter can be inserted into the fastener.



D. Turn the blade on the knife shaft twice by 360°. If this can be done without any problems, the process shaft and the cutting area door can be closed again.

If it is not possible to turn the blade two revolutions or to lock the shaft, it has to be checked if the drive bolts have engaged properly cutter half.

After checking and rectifying the problem, the blade again has to be turned twice by 360°.



3.4.4 HighTech-cutter maintenance

In the end a cutting machine always depends on sharp knives, because they keep the wear and tear to a minimum and create a beautiful cut. For this reason, the Multiplex cutter halves and the knives should be sharpened with a suitable tool every 50 operating hours. Please use special protective gloves against cuts and stabs for this process!

Preferably use Rühle's knife sharpener and it will only take 2 minutes to resharpen a complete Multiplex-cutter half.

For this purpose, the Multiplex-cutter half is positioned on a non slippery table in such a way, that the knife edges face the operator. First slide the knife sharpener along one side of the knife and then on the opposite side.

Never exert too much pressure – this could result in an even blunter knife. Again use special protective gloves against cuts and stabs.

The Rühle knife sharpener is well balanced and has as one of its components Vidia steel. The construction of the sharpener allows you to work even under very cramped conditions without any problems. There is a special hanger provided in the tool box to store the Rühle knife sharpener.



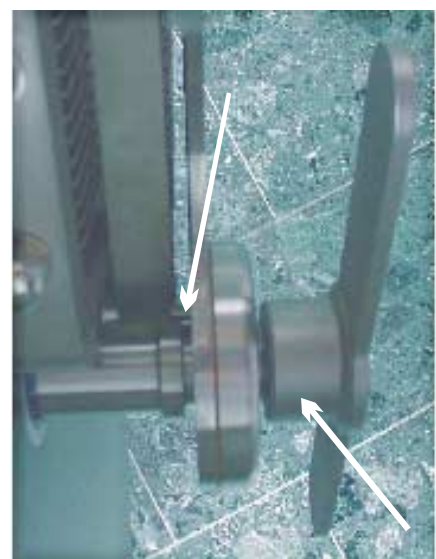
3.5 The sectioning blade

All the time, when handling the sectioning blade, protective gloves against cuts and stabs have to be worn. For the sectioning blade too, the principle of the sharp knife and the beautiful cut applies.

To install the sectioning blade it has to be put on the blade shaft in the cutting area first.

Now turn the sectioning blade around the stationary blade shaft until it engages and can only be turned together with the blade shaft.

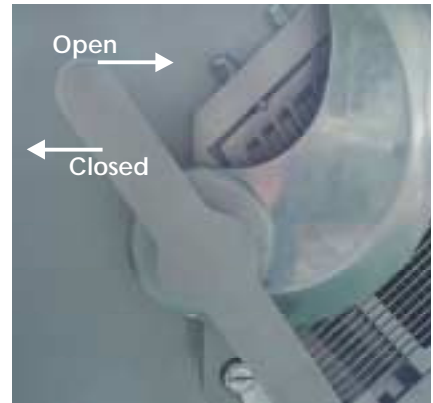
Hold the sectioning blade in this position and at the same time screw the wing nut counterclockwise onto the blade shaft, until it touches the blade.



The wing nut is fastened counterclockwise and loosened clockwise so that the sectioning blade doesn't turn loose during the cutting process.

Now loosen the wing nut by a full turn and fasten the nut again by swinging it round with lots of speed. This is sufficient to hold the blade in position.

The plunger plate can be used to loosen the wing nut by giving the plate in a clockwise direction.



3.6. The tool box

The storage area can hold 2 Multi-cutter frames, 6 Multiplex-Cutter-halves, 5 stabilizers and 1 knife sharpener – this means good order, safety and hygiene for all the accessories and the operator. Should the machine be equipped with special plunger plates, then these items can be stored under the tool box.

The tool box is located directly at the rear side of the machine.

After unlocking the hood of the tool box, it can be moved up to 180° to the right hand side by lifting it slightly.

A door latch keeps the door closed, so that it can be opened with a soft pull and closed with a soft push.

Only put clean, disinfected and dry accessories into the tool box.

Apart from the accessories belonging to the machine, no other parts are allowed to be stored inside the tool box.



3.7 Feeding the machine

The feed height is 1.100 mm above floor level. During manual feed no more than 50 kg of product should be put on to the machine.
for a comfortable operation a maximum of 25 kg is recommended.

3.7.1 The work bench

When the machine is positioned correctly the work bench has a slope of 3° towards the back of the machine.

This guarantees that the product slides safely into the process chamber and liquid will run off through the processing chamber after cleaning.

All sorts of preparations can be carried out on the work bench, from arranging to cutting.



3.7.2 The shaft – charging

The filling of the shaft is decisive for the cut appearance.
that's why special care has to be taken when filling the shaft.

Following rules should be observed in order to achieve the best results:

-put as much product as possible into the shaft
-never use very hard and very soft product at the same time
-put fat, tendons and vleece towards the top

Only use products which are approved and mentioned by name in the processing programs of the operating terminal.

If other products are intended to be used then written approval of Rühle is required.



To open the shaft push the handle about 1 cm away from you to release the locking mechanism. then pull the handle towards you until the limit stop is reached. Now let go off the handle so that the slider can lock itself in this position through its own weight. After filling, ideally with 110% of the shaft volume, locking and pre-compacting is started. Always keep both hands on the handle until the shaft is locked. Lift the handle a few millimeters out of its locked position and then push the slider down until the shaft is completely closed. This process is finished when the bottom part of the slider lies against the machine and when the machine starts working automatically with a started process program.

3.8. Product discharge

The product discharge for SR 1 and SR 1 turbo is always composed of cutting area door and discharge funnel.

3.8.1 The use of boxes

The machine has a discharge height of 450 mm. this makes it possible to use boxes of up to 300 mm height on top of a trolley.

Therefore there is the choice to use euro standard boxes of the sizes E 1, E 2 and E 3 respectively.

The discharge funnel inside the cutting area door Avoids Product from falling passed the boxes.

The funnel is inserted by holding it at an angle followed by lowering it in a horizontal position on to the holders at the bottom of the cutting area door.



4. Cleaning instruction

The High-Tech-Cutter SR1 and SR1 turbo is constructed in such a way, that all parts getting into contact with the product can be reached from the operating side and from the front of the machine. Correct cleaning of the machine is a condition for good food and prolongs the life of the machine. That's why the cleaning instruction has to be read, understood and adhered to by the person responsible for the cleaning of the machine

4.1 Safety hints

- The cleaning instruction has to be read before cleaning is started. The supervisor has to make sure, that the cleaning instruction has been read and understood by the cleaning personal.
- The cleaning personal has to clean the machine as directed and follow the instruction to the point. The supervisor has to write an instruction for the cleaning procedure.
- The cleaning personal has to tell the supervisor about defects of the machine immediately.
- The cleaning personal has to use the recommended cleaning agents and disinfectants.
- Don't make any alterations to the machine.
- The cleaning agents and disinfectants have to be made up to solutions according to the manufacturers product data sheet. Protective gear has to be worn.
- Preparing the machine for cleaning is part of the machine operation. That's the reason, why only a person, who has read and understood the operating manual, should undertake the cleaning preparation.

4.2. Cleaning agents and disinfectants

The following cleaning agents and disinfectants have to be used:

A. Cleaning agent: Alkaline cleaning: P3-topax 19, P3-topax 66
 Acidal cleaning: P3-topax56

Disinfectant: P3-topax 99, P3-topax 66

Source of supply: Henkel Hygiene GmbH, Reisholzer Werftstraße 38 - 42
 D - 40589 Düsseldorf, Tel.: 0211 / 9893-706

B. Cleaning agent: Alkaline cleaning: SOMPLEX Fettlöser
 Acidal cleaning: Somplex Schaum Sauer

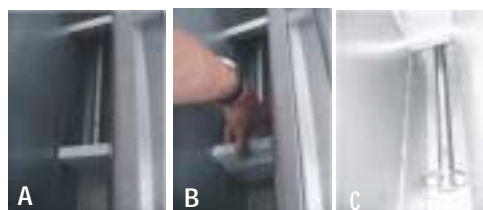
Disinfectant: P3-topax, P3-topax 91

Source of supply: Diverseylever, Morschheimer Straße 5, D-67292 Kirchheimbolanden

4.3 Cleaning procedure

Before cleaning the machine, the operator has to prepare the machine for the cleaning process and follow the sequence below exactly.

- a. Start machine and stop after 2 seconds.
- b. Remove all objects lying on top of the machine. Open tool box.
- c. Remove box from underneath produkt discharge.
- d. Open cutting area door completely and remove discharge funnel.
- e. Remove fastening slider from the processing shaft.
- f. Remove the sectioning blade.
- g. Place cutting blade in a safe storage area.
- h. Remove the Multi-cutter and dismantle it.
- i. Put the main switch of the machine to "0".
- k. Remove plunger plate by sliding it out of the processing shaft towards the top.
- l. Use drinking water from a water hose or a pressure cleaner to hose down the machine and the dismantled attachments, which have to be in a secured position, in the temperature range from 50 – 60 °C (according to the softening point of fat).
- m. Put the cleaning agent solution into a pressure foam generator at 3 bar, hose the foam onto the machine and the attachments and wait for 15 minutes.
- n. Use drinking water from a water hose or a pressure cleaner to hose down the machine and the dismantled attachments in the temperature range from 50 – 60 °C followed by drying with compressed air which is suitable for food (according to DIN ISO 85731-1).
- o. Remove the processing shaft and the fastening slider from the machine
- p. Remove the plunger plate by sliding it out of the processing shaft towards the top.
- q. Pull the pre-compacting plunger away from the machine and dismantle the attachments.



- r. Undertake a visual check for cleanliness of the machine and the attachments and repeat the the cleaning steps "L to N " if required.
- s. Fill the disinfectant solution into a pressure cleaner with a power rating of at least 3 bar, spray the solution onto the machine and the attachments and wait for 20 minutes.
- t. Use drinking water from a water hose or a pressure cleaner to hose down the machine and the dismantled attachments in the temperature range from 50 – 60 °C, followed by drying with compressed air, which is suitable for food (according to DIN ISO 85731-1).
- u. Assemble the machine following the sequence "K --> A".

5. Technical service

All works which have to do with the technical service are only allowed to be carried out by Rühle technicians and by persons with a written approval from Rühle. A difference is made between regular maintenance and regular service, so that the approval has to be valid for the respective service.

5.1 Regular maintenance

Regular maintenance has to be carried out at least once a week. This allows little errors or wear and tear to be detected before a major damage occurs.

Not performing regular maintenance leads to technical consequences and a loss in quality of the product. Irregularities discovered during regular maintenance have to be rectified immediately.

Apart from the machine system which is covered by the Rühle guarantee, there are parts which are not wear resistant and are parts which are not wear resistant and are there fore not covered by guarantee. With the High-Tech-Cutters SR1 and SR1 turbo grid knives, cutting blade and grid drive bolts are such parts.

Maintenance plan

- a. Dismantle machine according to the cleaning instruction and check for ease of operation, abrasion of material and any traces of wear and tear.
- b. Sharpen the sectioning blade with the sharpener and inspect the blade for damage.
- c. Sharpen the blade of the processing shaft – sliding fastener on the top side and inspect for damage.
Inspect the sliding surface of the sliding fastener.
- d. Sharpen the Multi-cutter knives of all Multiplex-cutter-halves with the sharpener and inspect for damage.

- e. Check Multi-cutter – drive bolt for ease of operation and the end clearance and make sure, that the running surfaces of the bearings show no sign of having plane surfaces.
- f. Check the cam rollers of all Multi-cutter frames for ease of operation and make sure, that the running surfaces of the bearings show no sign of having plane surfaces.
- g. Check all safety limit switches and safety covers according to the safety instruction.
- h. Undertake a visual check of the complete machine body. Obvious changes to the surface have to be rectified immediately.

5.2 Regular service

Regular service on the machine has to be performed every 2000 operating hours or at least once a year, in case that the machine has not been running for 2000 hours.

The regular service consists of the following steps:

- a. Exchange of the Multi-cutter drive bolts
- b. Exchange of the LC unit with battery set of the fully automatic grease dispensers.
- c. Smoothing and readjusting the sectioning blade.
- d. All the maintenance work according to "Regular maintenance"
- e. Check the main clutch and the free wheel bearings.
- f. Check the overload clutch of the pre-compacting plunger.
- g. Check the linear drive for the forward feed adjustment.
- h. Check the safety functions.
- i. Use operating panel to read error protocol and examine the errors.
- K. Perform a test run with the machine open, using the Bierschinken program.

5.3 Errors

Error	Solutions
Bad cross section of cut	Check product for required temperature Correct process machine adjustment? Correct grid mounted? Sectioning blade blunt or damaged? Grid knives blunt or damaged? No stabilisers mounted on grid?
Product falling past the collecting vessel.	Machine is not level (spirit level)? Collecting vessel not positioned correctly?
Liquid splashes on to the operator	Product behind the plunger? Product too hot? Pre-compacting set too high?
Can't close tool box.	Cutting blade inserted wrongly? Grid halves put together incorrectly?
Feeding system doesn't operate	Operating terminal is not switched on? „Emergency Stop“ because not all safety switches are connected?
Machine doesn't react	Shaft is not closed? No grid installed in cutting area? Cutting area door not closed?
Machine performance not sufficient	Selection of the correct machine adjustment? Process shaft filled sufficiently?
Grid can't be removed from cutting area	Fastening slider not removed? Sectioning blade not facing towards the bottom?

Should an error occur, which is not mentioned here, or should it not be possible, to rectify the problem with the solutions mentioned above, then Rühle will help – just call:
 +49 7748 - 523-0.

6. Technical documentation

Technical data

Current:	Three-phase current
Voltage:	400 V AC
Control voltage:	24 V DC
Current:	16 A
Power input:	1,5 kW

Should these data not confirm with the data on the data plate, then the values of the data plate apply. For safety reasons check the data with the manufacturer and get written confirmation.

The data plate is positioned under the main switch on the back side of the machine.



Compressed air suitable for food according to DIN ISO 8573-1

Oil: Class 1 / Particle: Classe 1 / Water: Classe 4

Power plug: CEE-Plug 16 A , 5 - poles

Working place noise level under 65 dBa

6.1 Circuit diagrams

The circuit diagrams of your High-Tech-Cutter SR 1 and SR1 turbo are supplied together with the machine. These diagrams are kept inside the switch box, in order to have them handy for the service technician. In case of reselling the machine, the circuit diagrams have to be handed over as well.

6.2 List of spare parts

The High-Tech-Cutter SR1 and SR1 turbo is only allowed to be serviced by Rühle service technicians and by authorised persons. These persons have all the necessary information and a list of spare parts for the machine.

Damage to parts is usually not caused by the part itself – that's why a fault diagnosis has to be carried out. For this reason, there is no list of spare parts included, because non-qualified repairs can do more harm than good..

In case of damage to the machine or a spare part, write down the machine type and machine number, call +49 7748 – 523-0 and we will help you find the fault and send you the right spare parts.

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