



Quick installation guide

IR 112

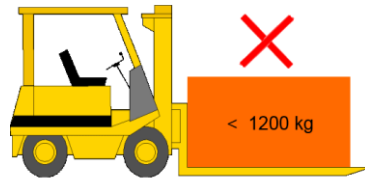
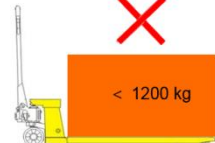
RÜHLE

Echte Originale.

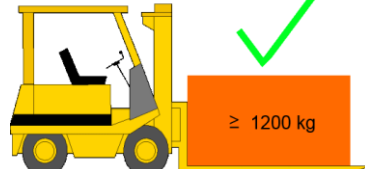
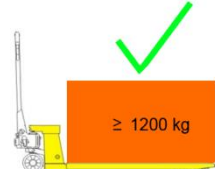
I • Installing the machine



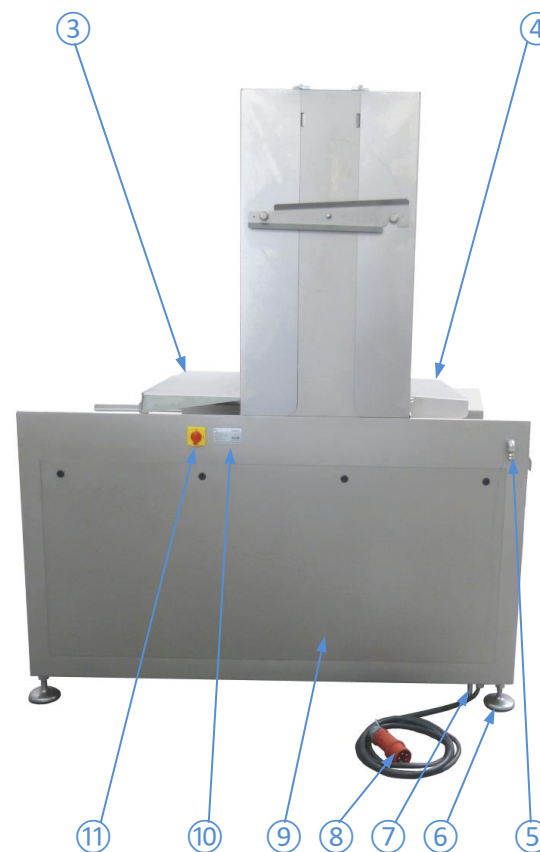
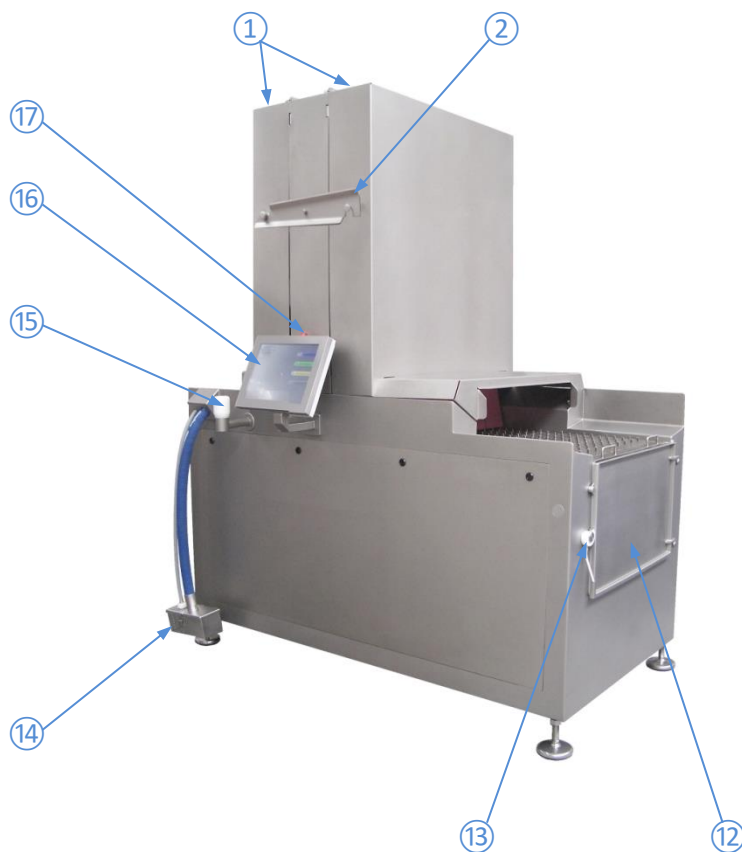
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1 x



II • Operation



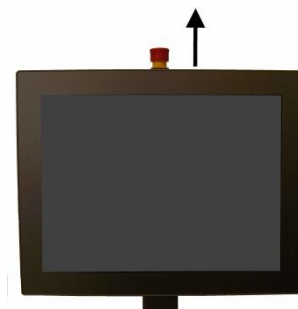
- 1) Hood
- 2) Locking device (Hood)
- 3) Reach protection (inlet)
- 4) Reach protection (outlet)
- 5) Water supply
- 6) Machine foot
- 7) Cable protection
- 8) Power supply cable
- 9) Side panel
- 10) Type plate
- 11) Main switch
- 12) Door internal brine chamber
- 13) Locking device (internal brine chamber)
- 14) Brine mixer / Brine suction
- 15) Ultrasonic sensor
- 16) Operation panel
- 17) Emergency-stop-button

⑤ • Water supply



(H₂O-Temp. = max. 30°C)
(H₂O-Pressure = max. 4 bar)

⑰ • Emergency stop

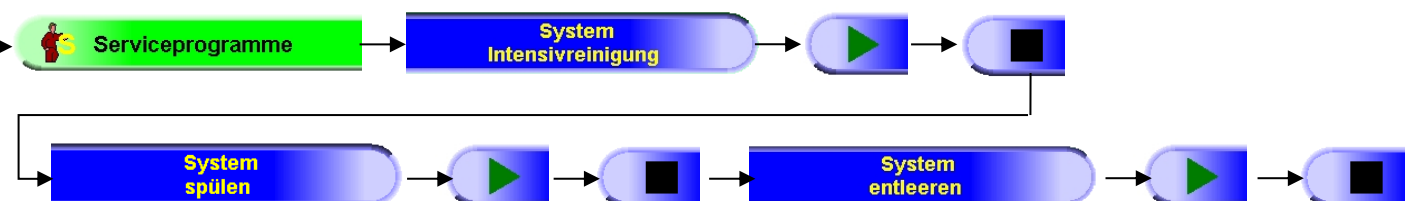


⑪ • Main switch

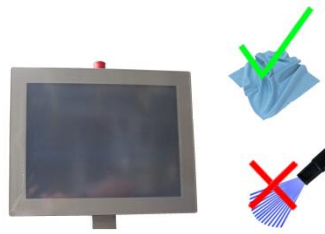


I = on
0 = off

III • Internal cleaning



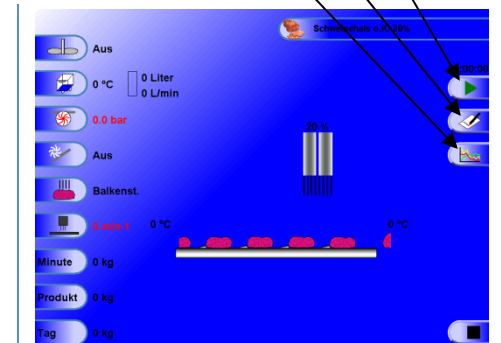
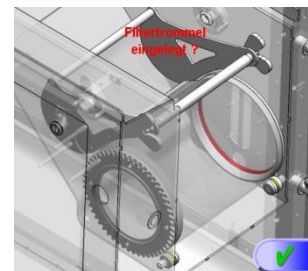
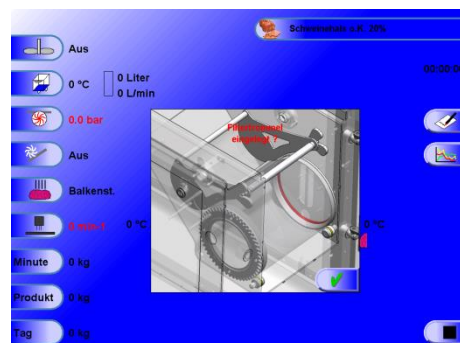
IV • External cleaning



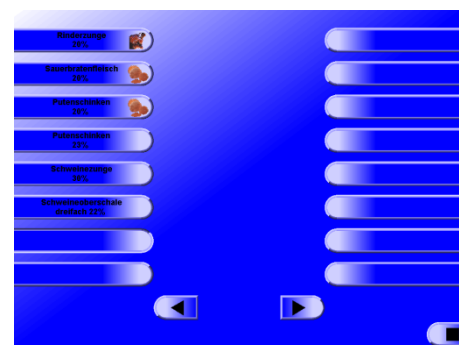
▶ • Recipe selection / Recipe start



Recipe / Recipe name
Push button scroll recipes
Back
Recipe start
Recipe editor
Statistic



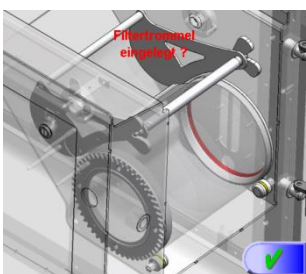
V • Programming recipes



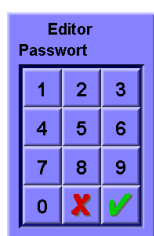
Modifying recipes



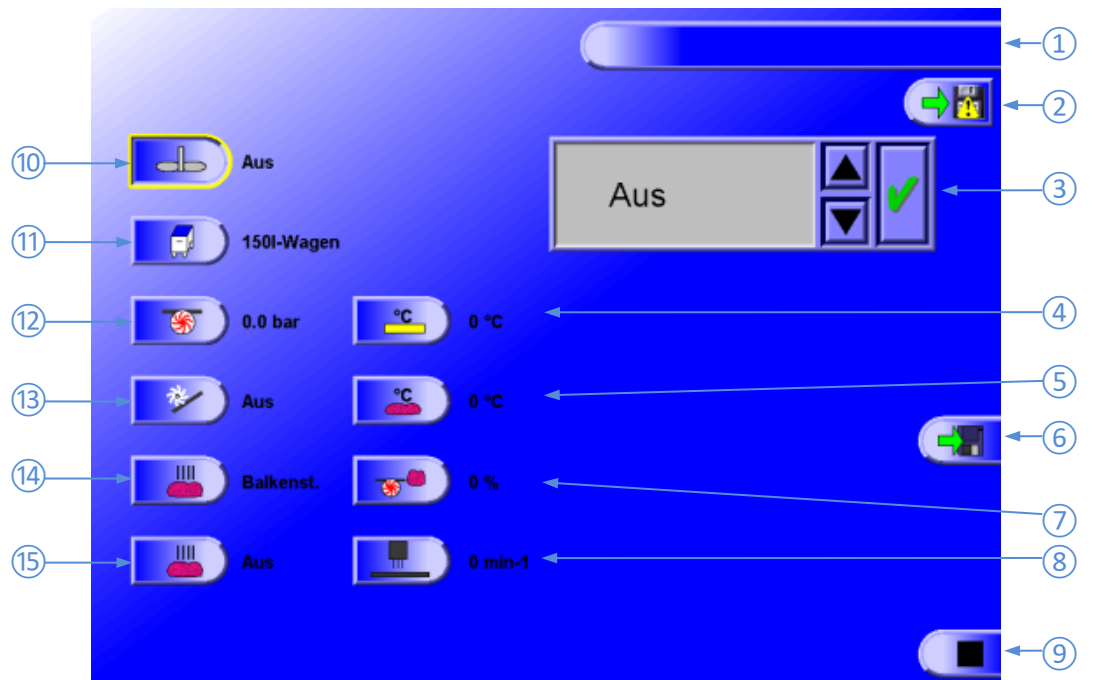
Creating new recipes



Recipe editor



Factory setting password = "0"



- 1) Recipe name (empty for new recipes)
- 2) Backup
- 3) Selection / confirmation
- 4) Brine temperature
- 5) Meat temperature
- 6) Save
- 7) Injection rate %
- 8) Hubs injection / minute
- 9) Back
- 10) Brine mixer
- 11) Brine container selection
- 12) Injection pressure
- 13) Brine processing
- 14) Selection injecting mode
- 15) Softer application



Translation of the original instructions

RÜHLE - Injection Centre

Type: IR 112

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Changes reserved

1 Safety Instructions

!!! Observe the safety instructions during the installation, operation, cleaning and maintenance of the Rühle Injection 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 hot surface.

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. needle bar. The machine must be shut down in the event of any damages or changes!
- b) Check the safety switches as follows:
Insert the transport rake and support, close the pickle door and hood, hook the reach-protection on the inlet and outlet of the hood.
- Start the machine. - Press the emergency-stop switch. - If the machine has not switched off, it must be shut down immediately!

- Start the machine. - Lift the "Inlet" reach protection by 20 mm. - If the machine does not switched off, it must be shut down immediately!
 - Start the machine. - Lift the "Outlet" reach protection by 20 mm. - If the machine does not switched off, it must be shut down immediately!
 - Start the machine. - Open the pickle door. - If the machine does not switched off, it must be shut down immediately!
 - Remove the respective transport supports. - Starting the machine without one of them must not be possible. - If it should start, it must be shut down immediately!
- c) Error messages of the control system must be heeded!

!!! 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



Error messages of the operating system must be heeded!
Non-compliance is strictly prohibited!

There is a risk of injury when touching or handling curing needles or softer blades!

The safety notes of the manufacturers must be observed when handling curing, cleaning or disinfecting agents!

!!! 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)!



Beware of hot surfaces, e.g. drives, brake resistance, etc. during maintenance work!

1.3 Intended Use

The Injection Centre may only be used for the injection of pickle into fish and meat products. 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!

2 Installation instructions

Installation and commissioning of the Injection Centre 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 Injection Centre.



The machine and machine parts must be transported by 2 persons (1x 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!

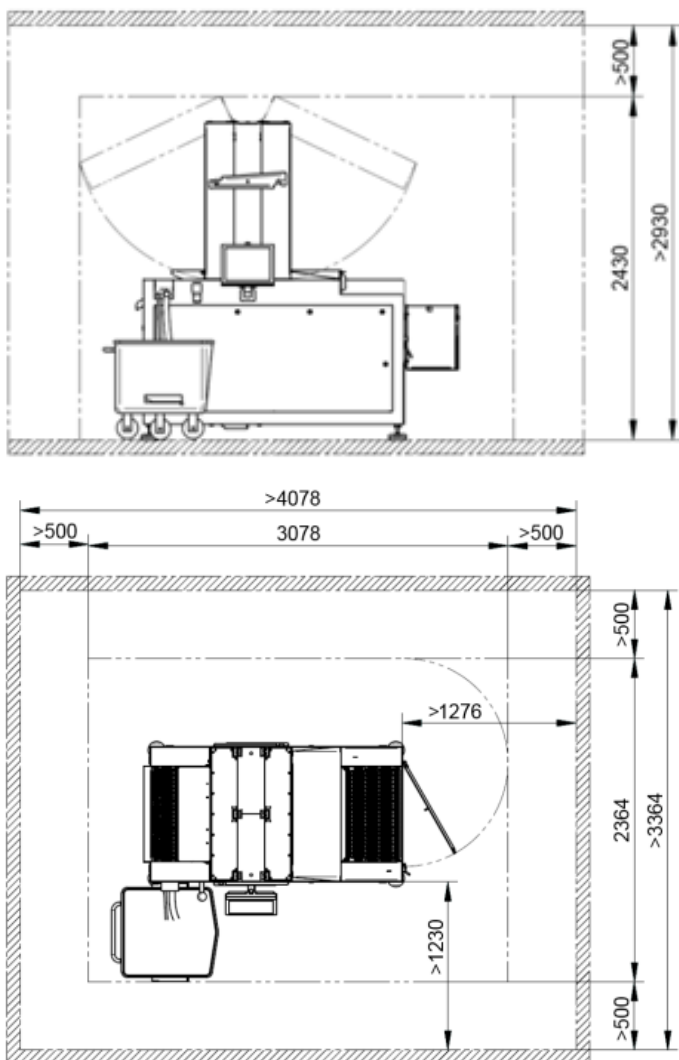
Make sure the machine bases have contact with the setup surface and are then tightened!

Foundation load: 3,5 kN/m²!

Set up the machine on a solid level floor with sufficient load bearing capacity!

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 32 A 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 Injection 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 following is strictly prohibited and anyone disregarding this prohibition acts gross negligently when:



- lifting the lamella of the reach-protection on the outlet side and reaching into the curing chamber during operation; the same applies the inlet side!
- operating the machine without side cover!
- operating the machine without perforated basket on the pickle mixer / the intake!
- manipulating the protective devices of the machine or deactivating them!

Working on the machine without the side covers installed or without the perforated basket installed on the pickle mixer / the intake is only permitted to a Rühle service technician during the service phase!



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!



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

4 Cleaning instructions

The Injection 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 external surfaces (all outside stainless steel surfaces + machine bases),
- reach-protection (inlet),
- reach-protection (outlet),
- inside of the hood,
- softer,
- needle bar,
- transport support,
- transport rake,
- perforated basket (pickle intake),
- perforated basket (pickle preparation),
- drum (pickle preparation),
- seal (pickle door of pickle preparation) and
- Inside chamber of pickle preparation

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

Recommended cleaning agents and disinfectants:

Art. No.	Product name	Description	pH value	Concentration for application [%]	Exposure times [min]	Temperatures [°C]	
15207	FINK - Spül ASS	Alkaline foam cleaner, mild	alkaline	1.0 - 5.0	5 - 15	20 - 50	daily
19402	FINK - Superfettlöser	Alkaline foam cleaner		0.5 - 5.0	5 - 20	20 - 50	
10030	FINK - FC 30	Cleaning and disinfection, combined		1.0 - 3.0	5 - 15	20 - 50	
18556	FINK - FC Power-foam A2	Alkaline foam cleaner		1.5 - 3.0	5 - 20	20 - 50	
13308 *)	FINK - Antisept G	Disinfectant for spray application, QAC		0.5 - 3.0	5 - 15	20 - 40	
17107	FT 107 DES	Disinfection		2.0 - 5.0	15 - 30	20 - 40	
13302	FINK - Antisept A	Alcohol-based disinfectant	neutral	100	5	RT	daily
13304	FINK - Antisept E	Alcohol-based disinfectant		100	5	RT	
18803	FINK - Alu-Reiniger	Acid foam cleaner	acid	2.0 - 5.0	5 - 15	20 - 50	Once in 2 weeks
17043	FT 43 SR	Acid foam cleaner		1.0 - 5.0	5 - 15	20 - 50	
18550	FINK - FC Power-foam S1	Acid foam cleaner		1.0 - 2.0	5 - 20	20 - 50	
17310	Ökoron® 10	Disinfectant, acid		0.3 - 1.0	20 - 30	5 - 70	
17307	Ökoron® 7S	Disinfectant, acid		0.5 - 2.0	1 - 20	5 - 60	
17312	Ökoron® 12	Acid disinfection		0.5 - 3.0	5	Cold	
17313	Ökoron® 13	Acid disinfection, foamable		0.1 - 1.0	5	45	
17900	Ökoron® SR	Ecological cleaner	acid	1.0 - 5.0	15 - 20	20 - 55	daily

*) 13308, FINK - Antisept G Because of customer-specific application prohibitions, QAC-containing products are sometimes not used since the IFS standard must be met. Possible alternative products would be, for example, FT 107 DES.

Supplier:

FINK TEC GmbH, Oberster Kamp 23, 59069 Hamm, Germany
Tel. +49 2385-730 / info@finktec.com / www.finktec.com

4.3 Cleaning procedure

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

Before starting with internal cleaning, remove coarse soiling and product residues from the curing chamber under the hood and the pickle preparation.

Preparation for outside cleaning:

- To ensure optimum cleaning, some components of the machine must be removed!
- Remove the perforated basket from the pickle intake as well as drum, perforated basket and seal of the pickle preparation!
- You can simply pull off the seal of the pickle door!
- Move the needle bar to the removal position to remove the other components. Proceed as follows:
 - 1) Select the "Service programs" item via the control panel!
 - 2) Select "Needle bar position"!
 - 3) Start the program and let it run.
- Remove the reach-protection at the inlet and outlet!
- Open both doors of the hood!
- Unlock the hold-down device!
- Remove the softer if so equipped!
- Remove the pickle hose at the distributor device of the needle bar!
- Remove the needle bar!
- Lock the hold-down device!
- Remove the transport supports and then the transport rakes!

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!



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!
- a waiting time of at least 10 minutes is observed after switching off the machine to allow the capacitors of the frequency converters to discharge to a harmless voltage level!

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) Check the seal of the pickle door for its hygienic condition and function!
- c) Check the drum of the pickle preparation for its hygienic condition and permeability!
- d) Check the perforated basket of the pickle preparation for its hygienic condition and permeability!

- e) Check softer blades for wear and tear, damage or broken blades!
- f) Check curing needles for wear, damages and clear passage!
- g) Check the needle system for leakage integrity!
- h) Inspection of all safety switches as outlined in Chapter 1.1 Safety Instructions!
- i) Visual check for changes or damages on all machine sides and accessible machine parts, e.g. needle bar. 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) Read operating hours and error log on the control panel and examine any faults that have occurred!
- c) Read the error memory (frequency converter)!
- d) Replacement of the needle seals in the needle register!
- e) Replacement of impeller in the secondary pump!
- f) Resharpening of the softer blades!
- g) Check the seal kit of the main pump!
- h) Inspect the hoses (piping and needle system)!
- i) Check radial shaft seals for leak tightness; replace otherwise!
- j) Check function of pressure transmitters and temperature sensors!
- k) Fill all lubricating nipples and moving parts in the machine compartment with grease!
- l) Test run with open machine (caution: moving parts)!

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



All materials and operating fuels must be separated and disposed of in accordance with nationally applicable regulations!

1. The following component contains oil or lubricant:

- Beam drive

All gear units / motors are equipped with oil draining screws. Subsequently!

2. In addition, the lubricating oil and grease must be removed correctly from all lubricated parts!

7 Technical documentation

7.1 Technical data

Connection voltage:	400 V 50/60 Hz 3-phase AC / N / PE
Power consumption:	14.7 kW
Full-load current:	26.2 A
Back-up fuse max.:	32 A
Protection class:	IP54
Protection class:	1
Ambient temperature:	+2 to 40 °C
Dimensions, W x H x D:	3078 x 2430 x 2364 mm
Machine weight:	1200 kg
Transport weight:	max.: 1800 kg

Output max.:	7000 kg/h
Speed:	6 - 60 strokes/min
Feed:	75 mm/stroke
Needle rows:	4 rows with 28 needles each
Clear opening dimension, W x H:	688 x 200 mm
Width of transport rake:	630 mm
Injection volume:	0% - 100%
Operating pressure max.:	4 bar
Water connection:	R ½", max. 4 bar
Foundation load:	3,5 kN/m²
Emission sound pressure level:	$L_{pA} = 76 \text{ dB(A)}$
Measuring uncertainty:	$K_{pA} = \pm 2.5 \text{ dB}$
Measured according to:	DIN EN 13534; DIN EN ISO 11204 accuracy class 2
Measured:	Idling without product, at 60 strokes/min

The data on the type plate principally applies; it is located between the main switch and the control panel at the rear 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:	IR 112
Legal form:	Lebensmitteltechnik	Designation:	Injection
Address:	Beim Signauer Schachen 10		Centre
	D - 79865 Grafenhausen	From series	0119
		no.	

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 Safety of machinery - Electrical equipment of machines - Part 1: General requirements
- DIN EN 13534: 2011-02 Food processing machinery - Curing injection machines - Safety and hygiene requirements
- EG 1935/2004 Regulation on materials and articles intended to come into contact with food.
- EU 10/2011 Regulation on good manufacturing practice for materials and articles intended to come into contact with food.
- EG 2023/2006 Regulation on good manufacturing practice for materials and articles intended to come into contact with food.

Signed by:

Place of issue: 79865 Grafenhausen
 Date of issue: 27 August 2014
 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:



A declaration of conformity for your machine (serial number), with updated content, if necessary, can be requested from RÜHLE GmbH.