

## Operating Instructions

### K 24

Cutter knife system



# Operating Instructions

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## K 24 Cutter knife system

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### Documents for machine operator

Operating Instructions

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# 1. Important notes

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## 1.1 Preface to the operating instructions

These operating instructions are intended to make it easy to understand the K24 Cutter knife system and to use it for its intended purpose.

The operating instructions contain important information on how to operate the cutter knife system safely, properly and economically. Observance of these instructions helps to avoid hazards, reduce repair costs and downtimes and to increase the reliability and service life of the cutter knife system.

The operating instructions must always be available at the place of use of the cutter knife system.

The operating instructions must be read and used by every person who is assigned to work on the K24 Cutter knife system, e.g.:

- Transport, assembly, commissioning and
- Operation, including troubleshooting in the work sequence, as well as
- Maintenance (servicing, repair).

Recognized technical standards for safe and professional work must be observed in addition to these operating instructions and the binding accident prevention regulations applicable in the country of use and at the place of use.

## 1.2 Warnings and symbols in the operating instructions

The operating instructions use the following symbols/designations that must be followed:



The hazard triangle with the signal word "CAUTION" serves as a work safety notice for all work for which there is a risk of personal injury or death.

In these cases, work should be done with special attention and care.



"ATTENTION" is written in places where special attention must be paid to prevent damage or destruction of the cutter knife system or its surroundings.



"NOTICE" refers to user tips and especially useful information.

# 1. Important notes

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## 1.3 Figure and position numbers in the operating instructions

If the text refers to a component of the cutter knife system which is illustrated in a picture in the text, the figure and position number is given in brackets.

Example: (5-5/1) means figure number 5-5, position 1.



*Push the balancing filling plate (AWF) (5-5/1) onto the knife shaft according to the installation plan.*

**Figure 5-5** Installing the balancing filling plate (AWF)

## 2. Safety

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### 2.1 Basic safety instructions

#### 2.1.1 Observe notes in the operating instructions

The basic prerequisite for safe handling and trouble-free operation of the K24 Cutter knife system is knowledge of the basic safety instructions and the safety regulations.

- These operating instructions contain important notes on how to operate the cutter knife system safely.
- All persons carrying out work on the cutter knife system must follow these operating instructions, in particular the safety notices.
- In addition, the rules and regulations regarding accident prevention at the place of use are to be observed.

#### 2.1.2 Obligation on the part of the operator

The operator is obliged to allow only those persons to work on the cutter knife system, who

- are familiar with the basic regulations on work safety and accident prevention and have been trained and instructed in the handling of the cutter knife system,
- have read and understood the operating instructions, in particular the section entitled "Safety" and the warning notes and have provided signed confirmation of this.

The safety-awareness of the personnel at work will be monitored at regular intervals.

#### 2.1.3 Obligation on the part of the personnel

All personnel working on the cutter knife system shall be obliged, before starting work, to

- observe basic work safety and accident prevention regulations,
- read the operating instructions, particularly the section entitled "Safety" and the warning notes, and provide signed confirmation that they have understood them.

#### 2.1.4 Hazards involved in handling the K24 Cutter knife system

The cutter knife system has been built to the latest technological standards and the acknowledged rules of technical safety. In spite of that, its use presents inherent risks which could result in bodily harm or even death of the user or third persons, or impairment of the cutter knife system or other property.

The cutter knife system is only to be used

- for its intended purpose
- in faultless condition with regard to safety-related aspects.



## 2. Safety

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Malfunctions that may impair safety are to be eliminated immediately.

### 2.1.5 Malfunctions

If safety-relevant malfunctions occur in the cutter knife system or if the operating characteristics indicate such malfunctions, the cutter knife system is to be shut down immediately until the malfunction is found and eliminated.

Malfunctions may only be eliminated by authorized qualified personnel.

## 2.2 Intended use

The K24 Cutter knife system is designed for use in meat bowl cutters. The cutter knife system is adapted to a bowl cutter and may only be operated on this bowl cutter.

Any other use or use beyond this is not considered as intended. KNECHT Maschinenbau GmbH is not liable for any damage resulting from this. The user alone bears this risk.

Intended use also includes observing all instructions in the operating manual.

An improper use of the cutter knife system is, for example, if:

- the K24 Cutter knife system is used in bowl cutters other than the one intended.
- the K24 Cutter knives are used with a different knife head.
- no original cutter knives of the company KNECHT GmbH are used.
- products are chopped which do not belong to the intended use of a meat bowl cutter corresponds to.

### **ATTENTION**

**Use in a different bowl cutter can lead to damage to the K24 Cutter knife system and the bowl cutter.**

## 2.3 Warranty and liability

Warranty and liability claims for personal injury and property damage are excluded, if they are due to one or more of the following causes:

- improper use of the cutter knife system,
- improper transport, start-up, operation and maintenance of the cutter knife system,
- operation of the cutter knife system with not functioning or defective safety and protective devices, or improperly installed safety and protective devices,

## 2. Safety

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- disregarding the instructions in the operating manual regarding transport, start-up, operation, maintenance and repair of the cutter knife system,
- unauthorized structural modifications of the cutter knife system,
- inadequate monitoring of parts subject to wear and tear as well as
- use of non-approved spare and wear parts.

Only use original spare and wear parts. In the case of parts purchased from other manufacturers, it cannot be guaranteed that they have been designed and manufactured in accordance with the stress and safety requirements.

### 2.4 Safety regulations

#### 2.4.1 Organizational measures

All existing safety devices must be checked regularly.

The intervals for recurring maintenance work prescribed or specified in the operating instructions must be observed!

#### 2.4.2 Protective equipment

Before each start-up of the cutter knife system, all protective devices must be properly attached and functional.

Protective devices may only be removed after the cutter knife system has been shut down and secured against restarting.

#### 2.4.3 Informal safety measures

The operating manual must be kept at the place of use of the cutter knife system at all times. Supplementary in addition to the operating instructions, the generally applicable and the local regulations for accident prevention must be provided and observed.

#### 2.4.4 Personnel selection, personnel qualification

Only trained and instructed personnel may work with the cutter knife system. Legal permissible minimum age must be observed!

The responsibilities of the personnel are for start-up, operation, maintenance and repair clearly defined.

Personnel who are in the training, instruction, education or familiarization phase, may only work with the cutter knife system under the constant supervision of an experienced person!

## 2. Safety

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### 2.4.5 Safety measures in normal operation

Refrain from any operation that could endanger safety. Only operate the cutter knife system when all safety devices are present and fully functional.

At least once per shift, check the cutter knife system for externally visible damage and proper functioning of the safety devices.

Immediately report any changes present (including those of the operating behavior) to the responsible office or person. If necessary, shut down and secure the cutter knife system immediately.

Before switching on the bowl cutter, ensure that no one can be endangered by the starting machine.

In case of malfunctions, shut down the bowl cutter immediately and secure it. Have faults rectified immediately.

### 2.4.6 Particular hazard areas

The K24 Cutter knife system can cause cuts if the safety instructions are not observed. Take care when installing and removing the cutter knife system. Do not touch the cutting edge! Personal protective equipment (cut-resistant gloves and safety shoes) must be worn.

### 2.4.7 Maintenance (servicing, repair) and fault rectification

Maintenance work must be carried out by qualified personnel on schedule. Inform operating personnel before starting repair work. The responsible supervisor must be named. Secure the maintenance area, if necessary.

After completion of maintenance work and fault rectification, mount all safety devices of the bowl cutter and check their function.

### 2.4.8 Structural modifications to the K24 Cutter knife system

Do not make any changes, additions or conversions to the cutter knife system without the manufacturer's approval. This also applies to the installation and adjustment of safety devices.

All modification measures require a written confirmation of KNECHT Maschinenbau GmbH.

Immediately replace parts that are not in perfect condition.

Only use original spare and wear parts. In the case of parts purchased from other manufacturers, it cannot be guaranteed that they have been designed and manufactured in accordance with the stress and safety requirements.

### 2.4.9 Cleaning the K24 Cutter knife system

Handle any cleaning agents and materials used properly and dispose of them in an environmentally-friendly manner.

## 2. Safety

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Ensure safe and environmentally friendly disposal of wear and replacement parts.

Knives and knife head parts must be cleaned outside the bowl cutter. After cleaning all parts must be rinsed with clear water.

### **ATTENTION**

**Cleaning agent remains on the knives and knife head parts can lead to corrosion and thus lead to knife breakages.**

#### **2.4.10 Lubricants / oils and greases**

When using oils and greases, observe the safety regulations applicable to the product. Comply with special regulations for the foodstuffs sector.

#### **2.4.11 Change of location of the K24 Cutter knife system**

In the loading and installation area, no persons other than those intended for this work are allowed.

Only touch the K24 Cutter knives at blunt areas.

For safe transport, the T440 Knife cart from KNECHT Maschinenbau GmbH is available.

# 3. Description

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## 3.1 Intended use

The K24 Cutter knife system chops, mixes and emulsifies the ingredients for sausage meat in a meat bowl cutter.

## 3.2 Technical specifications

Permitted maximum speed on the circumference of the blade with infeed level _____	140 m/s
Permitted maximum speed on the circumference of the knife without infeed level _____	160 m/s
Permitted maximum speed on the circumference of the high-speed knife without infeed level _____	180 m/s
Permitted bowl speed (max.) _____	13 1/min
Maximum axial knife distance at infeed level _____	20 mm
Gap between knife and bowl for 30–120 l. bowl cutter (minimum) _____	0,8 mm
Gap between knife and bowl for 200–1000 l. bowl cutter (minimum) _____	1,5 mm

## 3.3 Functional description

The K24 Cutter knife system can be used in meat bowl cutters for chopping, mixing and emulsifying the ingredients for sausage meat.

The K24 Cutter knife system is a fixed knife system. It only needs to be balanced once. After that, balancing is no longer necessary, even if the system is reinstalled, e.g. after sharpening work.

A sophisticated marking system ensures that the cutter knife system can always be installed in exactly the same way.

The shapes and profiles of the K24 Cutter knives produce a balanced ratio between chopping, mixing and emulsifying effects. This way, all three processes are completed at the same time.

The cutter knife system guarantees minimized maintenance work and maximum operating reliability.

# 3. Description

## 3.4 Description of components

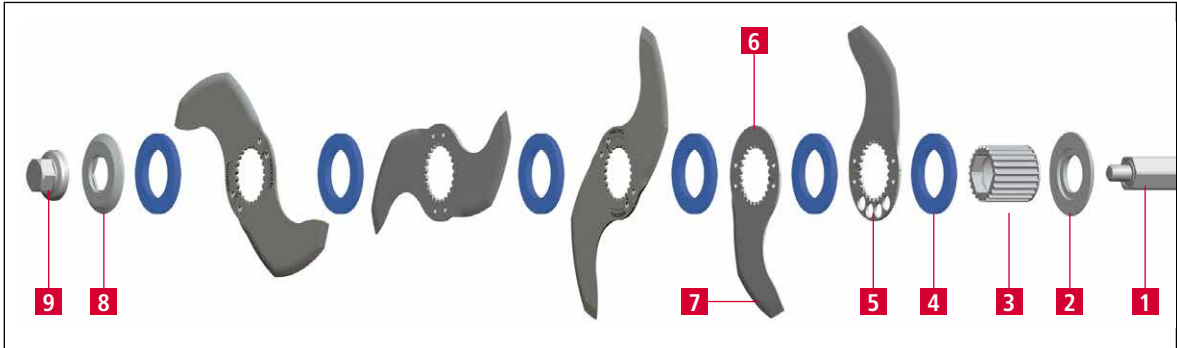


Figure 3-1 General view of the cutter knife system

- 1 Knife shaft bowl cutter
- 2 Initial ring (AR)
- 3 Profile sleeve
- 4 Spacer ring (ZR)
- 5 Balancing filling plate (AWF)
- 6 Filling plate (FST)
- 7 K24 Cutter knives
- 8 End ring (SR)
- 9 Clamping nut (Hydromechanical clamping nut HSM 100 or Mechanical spring clamping nut MCF 100)

### 3.4.1 Initial ring (AR)



Figure 3-2 Initial ring (AR)

The initial ring is the first ring of the knife head. Depending on its size, it has a hole, a hexagon or is screwed to the profile sleeve.

# 3. Description

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## 3.4.2 Profile sleeve



Figure 3-3 Profile sleeve

The profile sleeve is pushed directly onto the knife shaft of the bowl cutter. It is used to fix the knife system.

The knives are fixed to the periphery of the profile sleeve by the circumferential toothing. The marking system specifies the position of the knives.

## 3.4.3 Spacer rings (ZR)

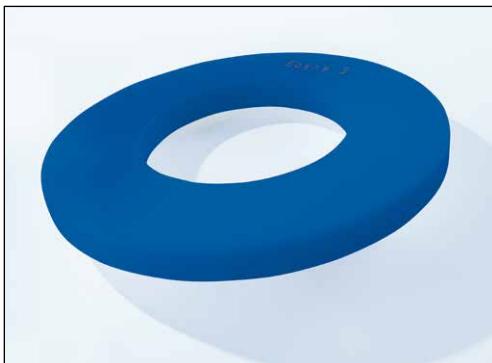


Figure 3-4 Spacer ring (ZR)

Spacer rings (ZR) are used as distance pieces between the individual components.

They vary in thickness depending on the type of installation.

## 3.4.4 Balancing filling plate (AWF)

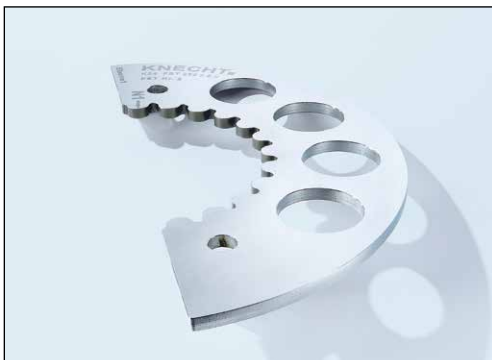


Figure 3-5 Balancing filling plate (AWF)

To improve material intake, depending on the application, only one cutter knife is used on each of two different levels.

The resulting gap and the unbalance is compensated with balancing filling plates (AWF), which are marked according to the level. The correct size is specified at the initial assembly.

**ATTENTION**

**The balancing filling plate must have the same thickness as the knife. It must be installed opposite the first knife.**

# 3. Description

---

## 3.4.5 Filling plate (FST)



Figure 3-6 Filling plate (FST)

To improve material intake, depending on the application, only one cutter knife is used on each of two different levels.

The resulting gap is compensated with filling plates (FST), which are marked according to the level.

**ATTENTION**

**The filling plate must have the same thickness as the knife. It must be installed opposite the second knife.**

## 3.4.6 K24 Cutter knives



Figure 3-7 Cutter knives

K24 Cutter knives are used for grinding, mixing and emulsifying the product. Depending on the application and cutter size, they have different shapes and sizes.

Depending on the requirements, they are used with different cutting edge angles.

## 3.4.7 End ring (SR)



Figure 3-8 End ring (SR)

The end ring is the last ring of the knife head.



## 3. Description

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### 3.4.8 Hydromechanical clamping nut HSM 100 (standard)



**Figure 3-9** Hydromechanical clamping nut HSM 100

The HSM 100 compensates for linear expansions of the cutting system caused by temperature changes, e.g. in cooking cutters. This prevents bending of clamping elements due to excessive tension.

This improves the breakage resistance of the cutter knives. Regardless of the operating condition, the knives are always clamped with the same tension force.

The hydromechanical clamping nut does not require any clamping wrench. With a small hydraulic hand pump, the cutter knives are clamped quickly, easily and reliably with approx. 90 kN (9 tons).

### 3.4.9 Mechanical spring clamping nut MCF 100 (optionally)



**Figure 3-10** Mechanical spring clamping nut MCF 100

The MCF 100 is operated with a light, fixed torque wrench. The knife head package is clamped with approx. 80 kN (8 tons).

Like the HSM 100, it also compensates for linear expansion of the clamping system.

## 4. Transport

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**For transport, the applicable local safety and accident prevention regulations must be observed.**

**Only transport the cutter knife system with suitable means of transport.**

### 4.1 Means of transport

Only use adequately dimensioned means of transport to handle the K24 Cutter knife system.

### 4.2 Transport damage

If damage is detected after unloading, during acceptance of the delivery, immediately inform KNECHT Maschinenbau GmbH and the forwarding agent. If needed, an independent expert must be called in immediately.

Remove packaging and dispose of in an environmentally friendly manner.

# 5. Installation

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Sharp knife edge.

Serious cutting injuries are possible.

Wear suitable protective clothing (protective gloves and safety shoes).

## 5.1 Installing the K24 Cutter knives

When installing the K24 Cutter knife system, proceed according to the installation plan prepared for you. This reduces the installation work to a minimum and the configuration of the cutter knife system meets your requirements. Always use the corresponding installation plan for the assembly.

### 5.1.1 Installing the initial ring (AR)



Figure 5-1 Installing the initial ring (AR)

Push the initial ring (AR) (5-1/1) onto the knife shaft according to the installation plan.

### 5.1.2 Installing the profile sleeve



Figure 5-2 Installing the profile sleeve

Push the profile sleeve (5-2/1) onto the knife shaft according to the installation plan.

# 5. Installation

## 5.1.3 Installing the spacer ring (ZR)



Figure 5-3 Installing the spacer ring (ZR)

Place spacer ring (ZR) (5-3/1) on the profile sleeve according to the installation plan.

**ATTENTION**

**Pay attention to ring thickness!**

## 5.1.4 Installing the K24 Cutter knife



Figure 5-4 Installing the K24 Cutter knife

Push the K 24 Cutter knife (5-4/2) onto the profile sleeve according to the installation plan.

Start with level 1. The letter of the cutter knife (5-4/1) must match the letter of the profile sleeve (5-4/3).

Proceed in the same way for the other levels.

**ATTENTION**

**Always install spacer rings and K24 Cutter knives according to the installation plan.**

**NOTE**

**If only one knife is set on the first level, only one knife may be installed on the second level. The knife must be opposite the knife on the first level. If the knife of the first level is in position "A", for example, the knife of the second level must be mounted on position "N".**

# 5. Installation

## 5.1.5 Installing the balancing filling plate (AWF)



**Figure 5-5** Installing the balancing filling plate (AWF)

Push the balancing filling plate (AWF) (5-5/1) onto the profile sleeve according to the installation plan.

### ATTENTION

The balancing filling plate must always have the same thickness as the knife. Incorrect balancing filling plates can lead to knife breakages.

When using an infeed level, a balancing filling plate must always be used on level 1.



**Figure 5-6** Filling plate (FST) installation

Push the next spacer ring (5-6/1) and cutter knife (5-6/2) onto the profile sleeve according to the installation plan.

# 5. Installation

---

## 5.1.6 Installing the filling plate (FST)



Figure 5-7 Installing the filling plate (FST)

**ATTENTION**

Push the filling plate (FST) (5-7/1) onto the profile sleeve according to the installation plan.

The filling plate must always have the same thickness as the knife. Incorrect filling plates can lead to knife breakages.

When using an infeed level, always use a filling plate on level 2.



Figure 5-8 Assembling the knife package

Assemble additional cutter knives according to the installation plan.

## 5.1.7 Installing the spacer rings (ZR)



Figure 5-9 Assembling the knife package

Push the spacer rings (5-9/1) onto the profile sleeve according to the installation plan.

# 5. Installation

---

## 5.1.8 Installing the end ring (SR)



Figure 5-10 Installing the end ring (SR)

Push the end ring (SR) (5-10/1) onto the knife shaft according to the installation plan.

## 5.1.9 Installing the HSM 100 Hydromechanical Clamping Nut



Figure 5-11 Installing the HSM 100 Hydro-mechanical clamping nut

Screw the Hydromechanical clamping nut HSM 100 (5-11/1) counterclockwise onto the knife shaft.

See the technical documentation of the HSM 100 Hydromechanical Clamping Nut.

### ATTENTION

Always assemble the knife head according to the installation plan supplied.

Deviations from the installation plan can lead to knife breakages.

### NOTE

Turn the knife shaft clockwise by hand and ensure that no knife touches the bowl. Give bowl cutter a test run.

In case of strong vibrations or scraping knives, call in a trained technician.



# 5. Installation

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## 5.1.10 Installing the MCF 100 Mechanical Spring Clamping Nut (optionally)



**Figure 5-12** Installing the MCF 100 Mechanical spring clamping nut

Screw the MCF 100 Mechanical spring clamping nut (5-12/1) counterclockwise onto the knife shaft.

See technical documentation of the Mechanical spring clamping nut MCF 100.

### ATTENTION

**Always assemble the knife head according to the installation plan supplied.**

**Deviations from the installation plan can lead to knife breakages.**

### NOTE

**Turn the knife shaft clockwise by hand and ensure that no knife touches the bowl. Give bowl cutter a test run.**

**In case of strong vibrations or scraping knives, call in a trained technician.**



# 6. Grinding

---

## 6.1 Grinding

In order to achieve optimum operational reliability and service life, correct care and handling and, above all, professional grinding of the cutter knives are essential preconditions.

Cutter knives must be reground on a regular basis. It is important to take care of the permitted wear limit, otherwise the risk of knife breakages will increase.

For sharpening we recommend KNECHT grinding machines, which enable professional sharpening.

The following types are available:

Machine type	For cutter size	Features
USK 160 S/HV 161	40–120 l.	For Butcher shops
S 200/S 20	40–500 l.	Manual grinding and polishing
USK 230 B - HV 208 II	40–750 l.	Automatic grinding, manual polishing
B 500	40–750 l.	Fully automatic grinding and polishing
B 600	200–1000 l.	Fully automatic grinding and polishing with controlled axes and knife magazine

### NOTE

**When using grinding machines from other manufacturers, it must be ensured that the cutting edge does not overheat. Structural changes of the steel can already occur at 200°C.**

**If the knife discolours during grinding yellowish to brown, the steel is overheated.**

### ATTENTION

**Do not overheat the knife during grinding. (recognizable by yellow to brown discoloration of the steel). Danger of knife breakages.**

# 6. Grinding

## 6.2 Basics of grinding

To make a blunt cutting edge sharp again, metal must be removed from the cutter knife.

A sharp cutting edge is only achieved if the knife is ground to the cutting edge until a small burr is formed. The burr is gently removed with polishing brushes under moderate pressure. The cutting edge is then very smooth. Good deburring makes the cutting edge stable.

The last step is to polish the knife surface with polishing brushes.

## 6.3 The cutting edge angle

The service life of a cutting edge is mainly influenced by the cutting edge angle. The smaller the cutting edge angle, the longer is theoretically the service life. In practice, however, it appears that if the cutting edge angle is too small, the cutting edge breaks out and is therefore no longer sharp.

The cutting edge angles are therefore between 20° and 35°. With cutting edge angles below 20°, the cutting edge becomes so unstable that it bends over at the slightest resistance. With an edge angle of more than 35°, the cutting edge is extremely stable, but loses its sharpness very quickly.

Cutting edge angle	Range of application
20°	Especially for the production of rind emulsions
25–27°	Universally applicable cutting edge angles for the production of boil-, dry- and cooked sausage (the material to be processed should not be colder than -10°C)
27–29°	For cutter material down to -20°C
30–35°	For frozen cutter material and special applications

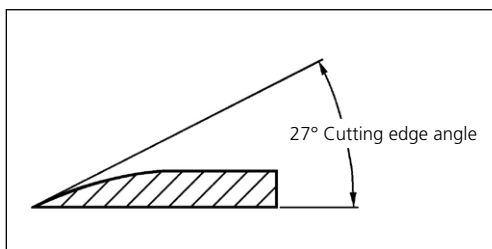


Figure 6-1 Cutting edge angle

# 6. Grinding


## 6.4 The knife profile

The cutter knife profile, like the cutting edge angle, has a great influence on the service life of the knife. In addition, the knife profile has a very strong influence on the quality of the meat products produced.

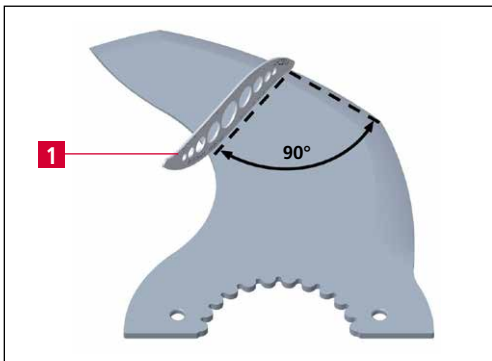
For the production of boiled sausage, a more convex profile is of advantage. It supports emulsification through the kneading effect.

For the production of firm dry sausage, the knife profile must be as flat as possible. This minimizes the kneading effect and supports water release during the maturing process.

K24 Cutter knives must be reground according to the KNECHT profile template.

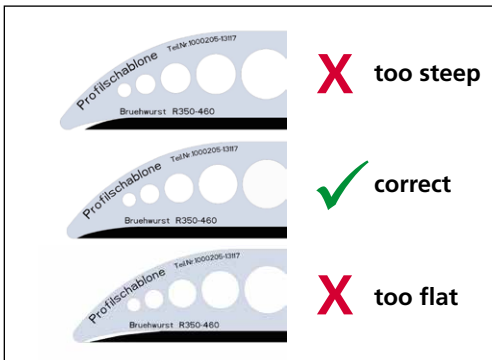
 **Sharp knife edge.**  
**Serious cutting injuries are possible.**

**CAUTION** **Wear suitable protective clothing (protective gloves and safety shoes).**



Place the profile template (6-2/1) at the point of the knife to be tested. The profile template must be at a right angle to the cutting edge.

**Figure 6-2** Profile template and its correct position on the knife



Place the profile template and move it until the curves of the profile template and the cutter knife bale touch each other.

**Figure 6-3** Checking the knife profile

# 6. Grinding

## NOTE

When checking the profile, the contact surface of the profile template must be placed completely on the cutter knife. The profile template must be at a right angle to the cutting edge (Figure 6-2).

## 6.5 Wear limit

In the cutting process, chopping, mixing and emulsifying take place. These processes run in parallel and must be completed simultaneously. To achieve this, the cutter knife has a cutting edge shape and blade contour that are exactly matched to these processes.

Correct regrinding keeps the knife shape approximately the same. The knife blade loses width with each resharpening and thus its mixing and emulsifying effect. Over time, this results in an unbalanced ratio between chopping, mixing and emulsifying performance.

The result is a slower temperature rise with longer cutting time. There is a risk that over-cutting will occur.

## ATTENTION

The risk of knife breakage increases with worn knives.



Figure 6-4 Checking wear

The wear limit is checked with wearing templates which can be supplied for each knife size.

Place the cutter knife (6-4/2) with the convex side facing down and place the appropriate wearing template (6-4/3).

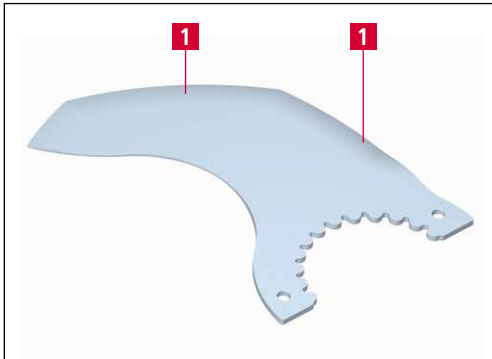
If the knife (6-4/2) overlaps the edge (6-4/1) of the wearing template (6-4/3), it can still be used.

If the edge of the knife is behind the edge of the wearing template, it must be replaced.

## 6. Grinding

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### 6.6 Weight



**Figure 6-5** Grinding areas

The K24 Cutter knife system operates without adjustable balancing (see chapter 5.1.5). In order to achieve smooth running without unbalance, the knives, which are seated on one level, will be ground to equal weight ( $\pm 1$  g).

If an infeed level is set (on level 1 one knife and on level 2 one knife – see chapter 5.1.5 and 5.1.6), the knife of level 1 must have the same weight ( $\pm 1$  g) as the knife on level 2.

Grinding the knife in this grinding area (6-5/1).

# 6. Grinding

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## 6.7 Grinding the K 24 Cutter knives

Check with wearing template whether the knife is still within the wear limit (see chapter 6.5).

Carry out visual crack and corrosion inspection (eye and microscope) – especially in the cutting area, on the knife back and in the clamping area.(use inspection report 11.2).

Use inspection report 11.1 in the appendix for grinding.

Regrinding must be performed wet and at right angles to the cutting edge with grit 120–180.

The grinding angle must be between 20° and 35° depending on the product (see chapter 6.3).

The knife profile must correspond to the KNECHT profile template (see chapter 6.4).

The weight difference per level (two opposite knives) must not exceed  $\pm 1\text{g}$  (see chapter 6.6).

Cutting edge and knife profile must be polished. For polishing, use sisal brushes with approx. 18m/s (e.g. d. 340 mm and 1000 1/min) and polishing paste.

After grinding, clean the knife (do not use strong alkaline or acid detergents) and rinse.

### ATTENTION

**The knife tip is not allowed to be reground (see chapter 6.6).**

### NOTE

**The inspection reports for grinding the K 24 Cutter knives and for checking the knives and knife head parts can be found in chapters 11.1, 11.2 and 11.3.**

# 7. Care and maintenance



**CAUTION**

Whenever working on the cutter knife system, the applicable local safety and accident prevention regulations as well as the chapters “Safety” and “Important notes” in the operating instructions must be followed.

**Risk of injury! A suitable transport trolley must be used to transport the K24 Cutter knives (KNECHT Knife cart T 440).**

## 7.1 Cleaning

The K24 Cutter knife system must be cleaned daily. All clamping surfaces must be kept clean. To do this, remove the cutter knife system and disassemble it completely.

Remove residues on the knives, especially on the knife feet. Remove residues from all parts of the knife head.

**Use the recommended cleaning agents from Henkel according to the table below.**

### ATTENTION

**When cleaning the bowl cutter, the knives must always be removed.**

**The K24 Cutter knife system may only be cleaned outside the cutter.**

**Cutter knives are not corrosion-resistant to aggressive cleaning agents. Cutter knives may only be cleaned with water that has not been treated. Water that has been treated with chlorine will cause pitting on the cutter knife. If there are signs of corrosion (pitting), do not reinstall the knives. Danger of knife breakage!**

Application	Product	Concentration	Application time
Alkaline cleaning	Foam	Topaz MD3 Topaz HD2 Topactiv 200	2–3% 2–3% 2–3%
	Manual	Sterile	2%
Acid cleaning foam	Foam	Topaz AC5 Topaz AC3	2–3% 2–3%
Disinfection	Foam	Topactiv DES Alcodes	2% Concentrate (alkaline solution)

Comply with further instructions in chapter 7.1.2.

# 7. Care and maintenance

## ATTENTION

Cleaning agent residues on the knives and knife head parts can lead to corrosion and thus lead to knife breakages.



Figure 7-1 Knife cart T440

The knives and knife head parts must be cleaned individually outside the bowl cutter.

After cleaning, all parts must be rinsed with clean water.

For the cleaning of the K24 Cutter knives we recommend the use of the KNECHT Knife cart T440 (7-1).

The knives can drain off freely in the KNECHT Knife cart. This effectively reduces the corrosion of the knives.

### 7.1.1 Cleaning and disinfection plan

Existing residues	Areas	Process / equipment
E.g. protein, fat, salt and spices	Processing equipment	Foaming process <ul style="list-style-type: none"><li>• Pre-rinsing</li><li>• Foam rinsing</li><li>• intermediate rinsing</li><li>• Disinfection</li><li>• Final rinsing</li></ul> We recommend the use of low pressure foam systems

## NOTE

When using the foam method, ensure that all surfaces are completely wetted! Observe in particular that all critical areas are reached.

Please ensure that you wear suitable protective equipment during the cleaning and disinfection measures (safety training required!). The information in the safety data sheets must be complied with).



# 7. Care and maintenance

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## 7.1.2 Standard surface cleaning and disinfection

Process step	Conditions	Note
<b>Removal of coarse dirt</b>		
<b>Thorough rinsing</b> with water from top to bottom	<b>Water</b> 50–60°C	Rinsing pressure approx. 15 bar
<b>Foam cleaning</b>	<b>Topactive 200</b> 3% Room temperature 15 min.	Topactive 200 is an alkaline wetting agent TFC cleaning agent (TFC = Thin Film Cleaning; modified foam process)
	alternatively <b>Topaz HD2</b> 3% Room temperature 15 min.	Topaz HD2 is a highly alkaline foam cleaner
<b>Intermediate rinse</b>	<b>Water</b> 50–60°C	
<b>Control</b>		Visual control of all critical areas
<b>Disinfection</b> after each cleaning!	<b>Topactive DES</b> 2% Room temperature 15 min.	Topactive DES is a disinfectant on the basis of peracetic acid
<b>Post rinse</b> of all treated surfaces	<b>Water</b> 50–60°C	

### NOTE

**After cleaning, all surfaces must be absolutely dry (corrosion protection).**

# 8. Malfunctions

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## 8.1 Defects

Defects	Possible cause	Remedy
Tool life short, Cutting edge is toothed	Cutting edge during grinding overheated	Sharpening only on wet grinding machines
		Cool well
Tool life short, Cutting edge is smooth	Cutting edge angle too large	Reduce cutting edge angle
Tool life short, Cutting edge bent or slightly toothed	Cutting edge angle too small	Increase cutting edge angle
	Knife badly deburred	Deburr longer (see also instructions in the operating instructions of the grinding machines).
Machine runs loudly and vibrates	Unbalance, possibly due to inaccurate grinding	Grind the knives to equal weight

If a malfunction is not included in the malfunction table or if the malfunction is not corrected, please contact our service department (chapter 10.2).

# 9. Disposal

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## 9.1 Disposal

At the end of the tool life of the K24 Cutter knife system, it must be disposed of by a qualified specialist company. KNECHT Maschinenbau GmbH will be glad to assist you with the disposal. Please contact us.

# 10. Service

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## 10.1 Postal address

KNECHT Maschinenbau GmbH  
Witschwender Straße 26  
88368 Bergatreute  
Germany

Phone +49-7527-928-0  
Fax +49-7527-928-32

mail@knecht.eu  
www.knecht.eu

## 10.2 Service

**Service line:**

For address, see postal address

service@knecht.eu

# 11. Appendix

## 11.1 Inspection report – K24 Cutter knife grinding

Department / Customer \_\_\_\_\_ Bowl cutter \_\_\_\_\_

Set no./Quantity \_\_\_\_\_



R-Knife



RR-Knife



RS-Knife

Pos	Inspection <u>before</u> grinding	o.k.	Remark
1	Knife within wear limit		KNECHT Wearing template

Pos	Inspection <u>after</u> grinding	o.k.	Remark
1	Weight in pairs per level		±1g
2	Shape in pairs per level		
3	Knife sharp and neatly deburred (The cutting edge must be absolutely smooth)		Fingernail test
4	Knife profile		KNECHT Profile template
5	Cutting edge angle =		with protractor
6	Cleaned with dishwasher, free of streaks		

### Additional information

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Date \_\_\_\_\_ Inspector \_\_\_\_\_ Signature \_\_\_\_\_

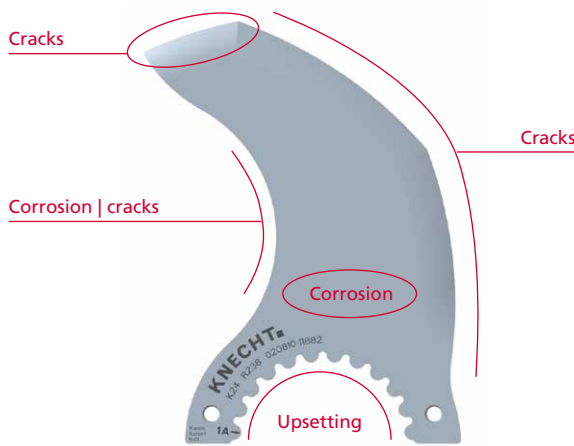
# 11. Appendix

## 11.2 Inspection report – K 24 Checking the cutter knife Frequency: at each grinding operation

Department / Customer \_\_\_\_\_ Bowl cutter \_\_\_\_\_

Set no./Quantity \_\_\_\_\_

Pos	Inspection	o.k.	Remark
1	Visual inspection for cracks, corrosion & upsets		Visual inspection
2	If cracks, dangerous corrosion or upsets suspected: Inspection under microscope or directly by KNECHT Maschinenbau GmbH		microscope (approx. 6.5 to 45x magnification)



**Visual inspection K24 Cutter knife on both sides of the knife!**

### Additional information

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Date \_\_\_\_\_ Inspector \_\_\_\_\_ Signature \_\_\_\_\_

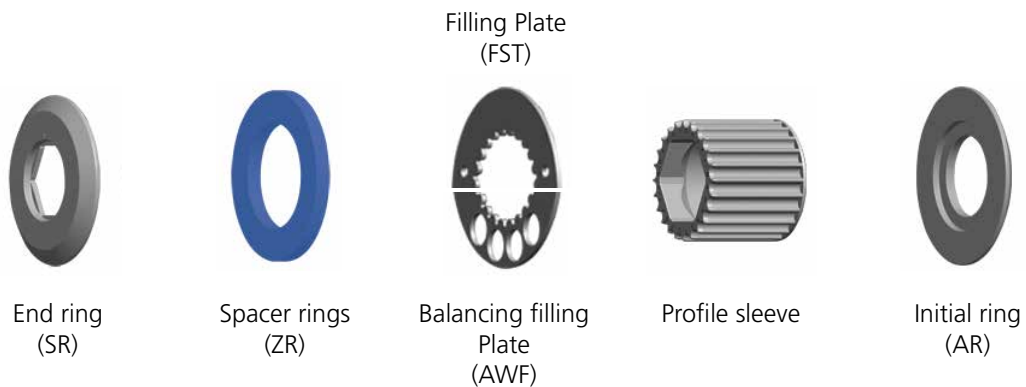
# 11. Appendix

## 11.3 Inspection report – K 24 Check knife head Frequency: ideally quarterly (at least every six months)

If desired, inspection directly by KNECHT Maschinenbau GmbH.  
Write to service@knecht.eu

Department / Customer \_\_\_\_\_ Bowl cutter \_\_\_\_\_

Set no./Quantity \_\_\_\_\_



Pos	General condition – Flatness – Cracks	o.k.	Remark
1	Initial ring (AR)		Hair ruler
2	Spacer rings (ZR)		Hair ruler
3	End ring (SR)		Hair ruler
4	Profile sleeve		Visual inspection
5	Filling plate (FST)		Visual inspection
6	Balancing filling plate (AWF)		Visual inspection

### Additional information

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Date \_\_\_\_\_ Inspector \_\_\_\_\_ Signature \_\_\_\_\_

# 11. Appendix

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## 11.4 Acceptance protocol KNECHT K24 Cutter knife system

- Documentation received
- Profile template received
- Wearing template received
- Installation plan received

### Customer

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### Supplier

KNECHT Maschinenbau GmbH  
Witschwender Straße 26  
88368 Bergatreute  
Germany

Phone +49-7257-928-0  
Fax +49-7257-928-32

mail@knecht.eu  
www.knecht.eu

Date/Place: \_\_\_\_\_

\_\_\_\_\_  
Signature Buyer

\_\_\_\_\_  
Signature Seller



# 11. Appendix

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## 11.5 EC Declaration of Conformity

We are manufacturer and distributor of cutting tools and the associated clamping elements. The products are used in machines for food production and come into contact with foods.

We confirm that the products comply with the laws and EC directives listed below:

- Regulation EC No. 10/2011
- Framework Regulation EC Nr. 1935/2004
- Directive 2007/19/EC
- Food and Feed Code LFGB

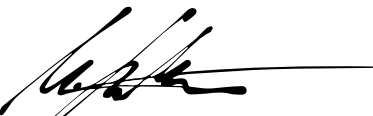
We confirm that we manufacture the products in accordance with good manufacturing practice (Framework Regulation EC No. 2023/2006) and that they are marketable.

The traceability of the individual components that come into contact with foods, is guaranteed at all stages, (EC No. 1935/2004 Art. 17). No substances are released that negatively affect the foods or endanger health.

The validity of the declaration expires in case of changes in the legal requirements.

Bergatreute, January 23, 2023

KNECHT Maschinenbau GmbH



Markus Knecht  
CEO

**KNECHT Maschinenbau GmbH**

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