

# ***STRAUTMANN***

## **Operating Instructions**

### **Knife grinder**



06/09

***STRAUTMANN***

**Operating Instructions**

## EC Declaration of Conformity

according to EC directive 98/37/EC IIA

We, the company B. Strautmann & Söhne GmbH & Co. KG

Bielefelder Str. 53

D-49196 Bad Laer

declare in sole responsibility that the product

### Knife grinder

to which this declaration refers, complies with the safety regulations level known at the time and with the relevant basic safety and health requirements of EC directive 98/37/EC.

#### Relevant EC directives:

Machinery directive 98 / 37 / EC

Low voltage directive 73 / 23 / EC

Electromagnetic compatibility 89 / 336 / EC

#### Applied harmonized standards:

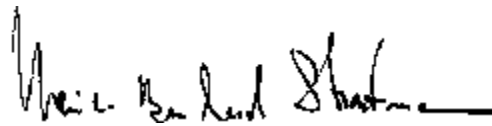
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Bad Laer, January 2006



Dipl.Kfm. W. Strautmann  
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Dipl.Ing. H.-B. Strautmann  
Managing Director

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## 1. Foreword

Dear customer,

Thank you for the confidence you have shown in us.

You have decided in favour of our high-quality Strautmann knife grinder. Strautmann knife grinders excel by their robust workmanship and easy handling in whatever working process.

With Strautmann being your partner, you have an innovative company at your side that you can rely on.

These operating instructions will impart important and useful knowledge about your knife grinder. Furthermore, they contain information and instructions with regard to operational safety and maintenance of the product.

We wish you a successful operation with your Strautmann knife grinder.

### Safety

Before commissioning, please read the operating instructions and observe the safety instructions!



**In these operating instructions, we have marked all paragraphs concerning your safety by a warning triangle. Please pass all safety instructions on to other users as well. Do not carry out any work which, without precautionary measures, might lead to personal injury or machinery damage.**

The warning and information signs fixed to the product give important information about safe operation. Please observe these signs for your own safety.

In case of any unclarified questions, please contact your Strautmann representative or the factory.

**Machine specifications:** These specifications should always be available. Please quote them when ordering spare parts.

Please copy the machine specifications of your new **knife grinder** from the type plate into this manual.

**Vehicle Ident. No.**

**Type**

**Year of manufacture**

**Identification data**

Manufacturer:	B. Strautmann & Söhne GmbH & Co. KG
Machine Ident. No.:	
Type:	Knife grinder
Admissible system pressure bar:	
Year of manufacture:	
Basic weight kg:	62 kg
Three-phase A.C. motor:	400V / 1.1kW 230V / 1.1kW
Rated speed:	2870 r.p.m.

**Manufacturer's address**

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**Formal information about the operating instructions**

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## 2. Machine description

The knife grinder is a mobile worktable designed for sharpening knives of silage trailers and baling presses for round and square bales. The product is equipped with a three-phase A.C. motor which is mounted on a swivel head and onto which the cup wheel is fixed. The grinding head is provided with a vertical parallelogram suspension and its inclination can be adapted to any ground section by means of adjusting screws. The special knife holders are clamped in the clamping device together with the knife to be sharpened. Now, the knife is evenly sharpened in one work step via a hand-controlled swivelling movement of the grinding head.

### 2.1 Pictographs on the machine



**Beware of crushing risks**

People are not allowed in areas marked this way during operation. Before carrying out any necessary work in these areas, make sure that the machine is safely positioned and has been disconnected from the power source.



**Wear ear protectors!**

Given the occurring noise, ear protectors must be worn during grinding work.



**Wear protective goggles!**

For safety reasons, protective goggles must be worn during grinding work.

Furthermore, there are pictographs and explanations on the machines describing operating elements and functions. These instructions are to be observed and followed.

## 2.2 Correct use / Maintenance

The knife grinder is a mobile worktable designed for sharpening knives of silage trailers. Strautmann will not assume responsibility for any incorrect use (e.g. sharpening of other objects etc.) and any damage resulting therefrom. All warranty claims will become void. Only original bema parts or parts purchased at bema's shall be used for maintenance work. Any modifications on the knife grinder have to be agreed upon with Strautmann. When using externally sourced components, the warranty claim will become void. Manufacturer's specifications regarding operating, service and maintenance conditions are to be observed.

## 2.3 Environmental influences / Location

Be sure to choose a solid, even and dry surface as the location for the knife grinder. Furthermore, inflammable goods must not be stored within a radius of 5 m as sparks will be flying during sharpening work.

## 2.4 Accident prevention



**The operation of the product involves risks that you as the user, operating and maintenance staff can counteract.**

The following safety instructions ensure your safety and the safety of other people and avoid damage to your machine when being conscientiously observed. The current occupational safety regulations are to be observed; among others accident prevention regulations "General regulations" (VGB 1).

## 2.5 Cleaning of machine

Use air to blow accumulated swarf off the machine after finishing grinding work.

### **3. Maintenance**

#### **3.1 Maintenance intervals**

After a downtime of more than 4 weeks, the knife grinder must be given an all-round check.

The knife grinder must be checked for its safe condition and operability by an expert

1. before commissioning
2. at adequate intervals (every two weeks)
3. after modification or repair work.

#### **3.2 Maintenance list**

The items specified herein are general information for maintenance work. Special information for individual assemblies is specified in the relevant chapters.

- During annual maintenance work, all screws are to be checked for tightness and are to be retightened, if necessary. Check welding seams subject to wear for fissures.
- Check all safety elements for completeness and correct fixing.
- Functional check of electrical components
- If adjusting possibilities for the cup wheel have been exhausted, it must be replaced by a new one.
- Visual check of grinding wheel for ruptures and fissures

## 4. Power supply

### 4.1 Electrical equipment

Any work on the electronic system is only to be carried out by an expert with the system de-energized. For details regarding the electrical equipment, please refer to the documentation.

### 4.2 Mains connection

According to EN 60204, the user is responsible for establishing the mains connection. The enclosed power plug is to be used for this purpose. Switch off the device and pull out the mains plug, before relocating the device or carrying out repairs or other work that is not connected with the operation of the device.

### 4.3 Checking of drive sense of rotation



When switching on the machine for the first time, ensure that the cup wheel is rotating in the right direction.

The sense of rotation of the cup wheel (pos. 2) is indicated on the motor head (pos. 1). The sense of rotation depends on the phase sequence of the mains power line which may be connected in different ways. Wrong sense of rotation may cause damage to the machine, and the machine must be stopped immediately.

**Electrical work must be carried out by an expert!**

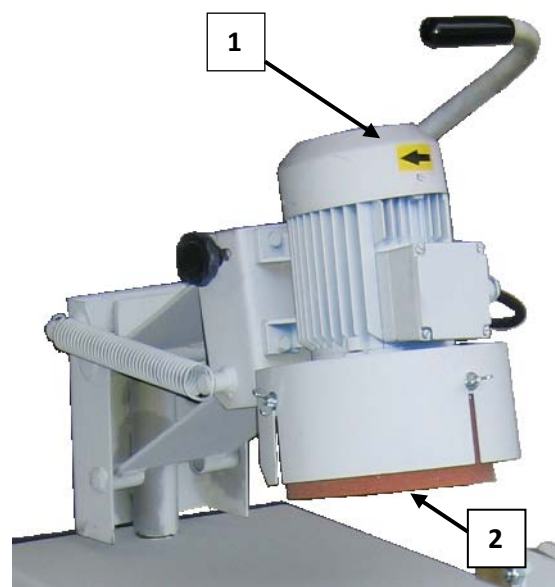


Illustration 1: Sense of rotation

## 5. Commissioning

Before carrying out the following adjustment and inspection work, disconnect the grinder from the mains in order to avoid accidental starting.

### 5.1 Clamping of knife holder



Always make sure to use the proper knife holder for the respective knife!

Push the knife holder (pos. 3) with the pin into the fixing guide mechanism as far as it will go. The knife holder is then clamped in the guide mechanism by means of the lateral locking screw (pos. 4). Check that the knife holder fits tightly in the guide mechanism and is not loose in order to ensure a safe seat of the knife.

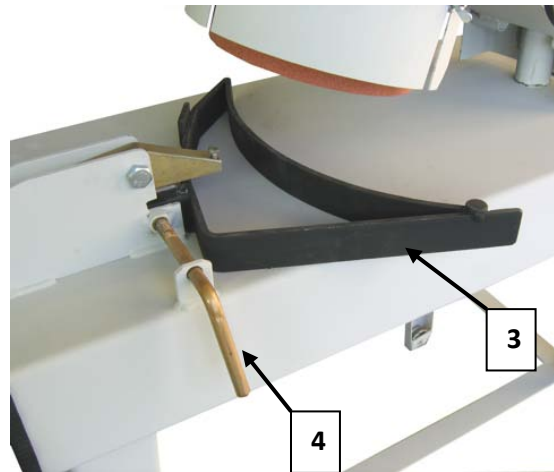


Illustration 2: Clamping of knife holder

### 5.2 Clamping of knife



Always make sure to use the proper knife for the respective knife holder! Eccentric lever must be completely turned!

The knife (pos. 5) is suitably positioned on the holder in the guide mechanism until it is in contact with the stop. The knife is then pressed onto the holder by means of the eccentric lever (pos. 6). In order to compensate for material thickness of the knives, turn the hexagon screw (pos. 7) adequately onto the knife. Then completely turn the eccentric lever with little effort until it is pointing downwards. Ensure that the knife is tightly clamped onto the holder and loosening is avoided.

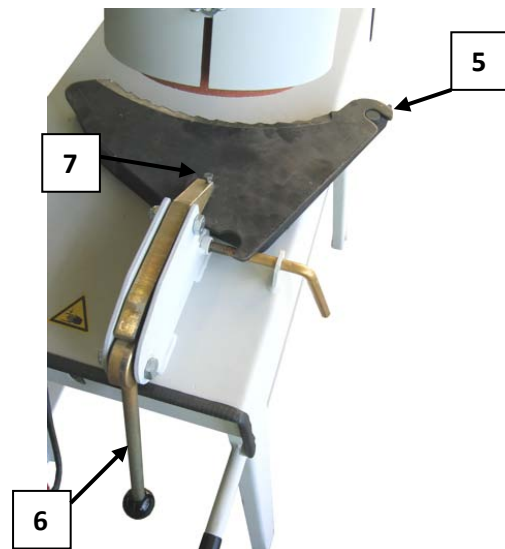


Illustration 3: Clamping of knife

### 5.3 Cup wheel protection



Before commissioning, ensure that the cup wheel is projecting far enough beyond the protection!

The cup wheel protection (pos. 8) must be adapted to the signs of wear of the cup wheel. The protection should be recessed by approx. 1 cm compared to the cup wheel. Unscrew the three wingnuts (pos. 9) to carry out adaptation work. The protection can now be adjusted to the appropriate clearance and be screwed on again.

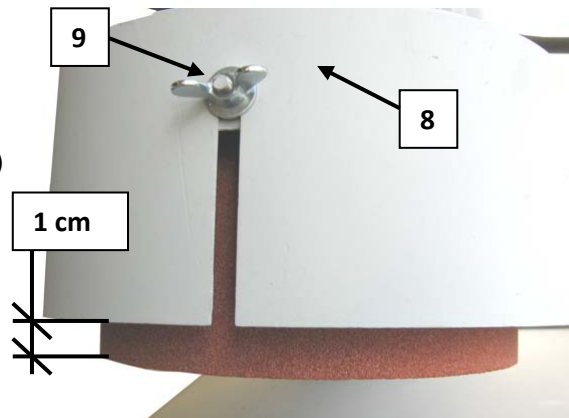


Illustration 4: Cup wheel protection

### 5.4 Grinding angle adjustment of grinding head



Before starting grinding work, adapt the grinding head to the cutting angle of the knife.

The inclination of the grinding head can be adjusted via the two lateral adjusting screws (pos. 10). Unscrew them such that the head can be adjusted and retighten them when having reached the appropriate grinding angle between grinding head and knife.

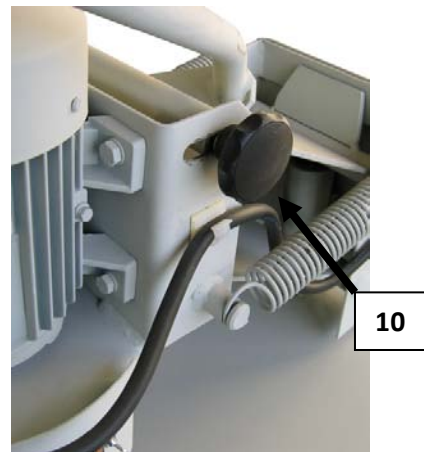


Illustration 5: Grinding angle of grinding head

The grinding angle (pos. 11) can be controlled by pressing the grinding head onto the knife's edge. To ensure optimum sharpening of the knife, the grinding angle and the cutting angle must be equal to each other.



Illustration 6: Grinding angle of knife's edge

### 5.5 Adjustment of swivel stop



Before starting grinding work, adapt the swivelling range of the grinding head to the cutting edge of the knife.

Two adjusting screws (pos. 12) for the swivelling range are mounted behind the grinding head seat. By turning them in or out, the swivelling range is limited.

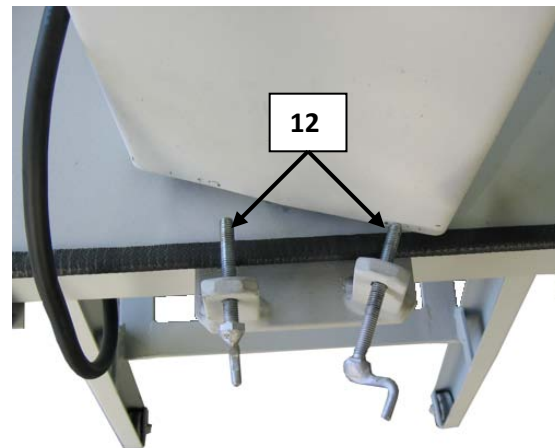


Illustration 7: Adjustment of swivel stop

**Ensure that the sliding contact with the knife will never be interrupted. The cup wheel must always be in contact with the knife during grinding.**

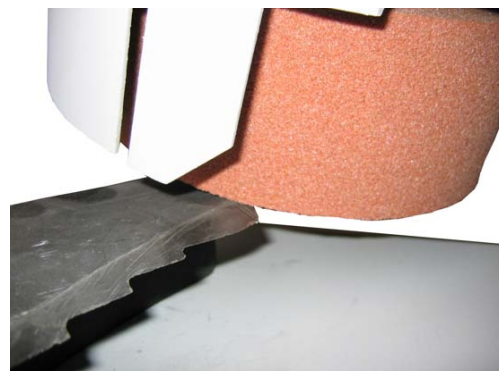


Illustration 8: Swivel stop in maximum position



The cup wheel must not be extended thus far that it is no longer in contact with the knife.

The cup wheel must always be in contact with the knife. Otherwise, it will go beyond the knife allowing the grinding head to be pressed down further and to hit the machine housing. This will cause damage to the grinder and to the knife.

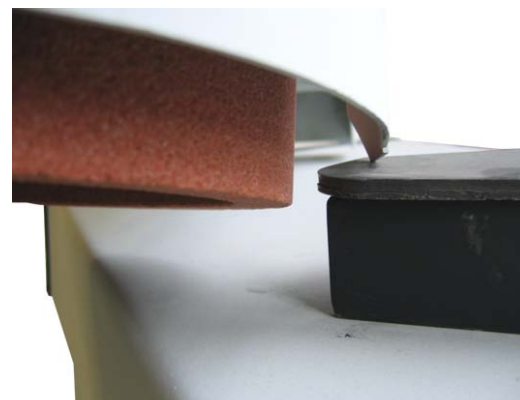


Illustration 9: Swivelling device in wrong position

## 6. Grinding procedure

### 6.1 Work routine



When starting the grinding procedure, set the cup wheel gently down onto the knife to avoid the risk of cup wheel fracture.

#### Instructions

- The operator's position is on the right-hand side of the grinder as there are sparks flying during grinding.
- Use your right hand to move the grinding head.
- Sparks are flying to the front (see direction of arrows), other people are not allowed within the flying sparks area.

After the motor (pos. 13) has been switched on, the cup wheel is gently set down onto the knife's edge. Then swivel the grinding head over the knife's edge using light pressure until the edge is sharp again.

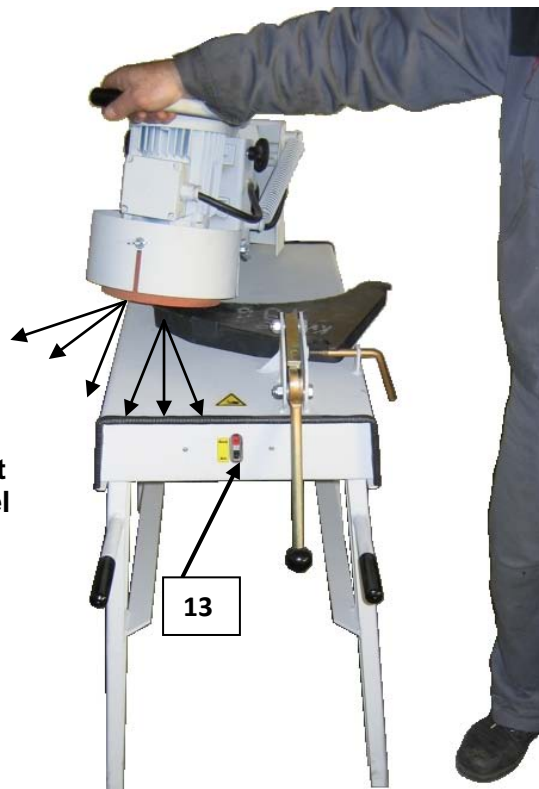


Illustration 10: Operating position

### 6.2 Grinding instructions

- Only use original cup wheels when operating the device.
- Always adapt the cup wheel protection (illustration 4: Cup wheel protection) to the degree of wear of the cup wheel.
- Do not work within the vicinity of inflammable objects (flying sparks).
- Check the required sense of rotation (illustration 1: Sense of rotation) of the cup wheel before each working cycle.
- Finish the grinding procedure when the knife's edge is sharp again.
- Ensure that the grinding pressure is not too high in order to prevent the temper from being drawn from the knife's edge and the latter from being softened during grinding. Signs for an excessive pressure are bluish discolourations of the ground knife's edge.
- Wear close-fitting safety clothes during grinding work.
- Wear safety goggles to protect your eyes.

## 7. Replacement of cup wheel

The replacement of the cup wheel is only allowed when using original spare parts!

### Disassembly:

1. Unscrew the fastening screw (pos. 14)
2. Remove the pressure disc (pos. 15) (pressure disc is only held by the screw)
3. Withdraw the used-up cup wheel.

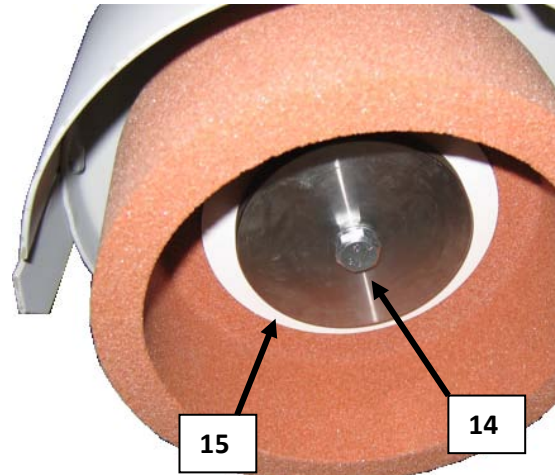


Illustration 11: Disassembly of cup wheel

### Assembly:

1. Slip the new cup wheel (pos. 16) onto the flange plate (pos. 17).
2. Position and screw on flange plate (pos. 15).
3. When tightening the screw, hold the cup wheel with your hand and firmly tighten the screw.

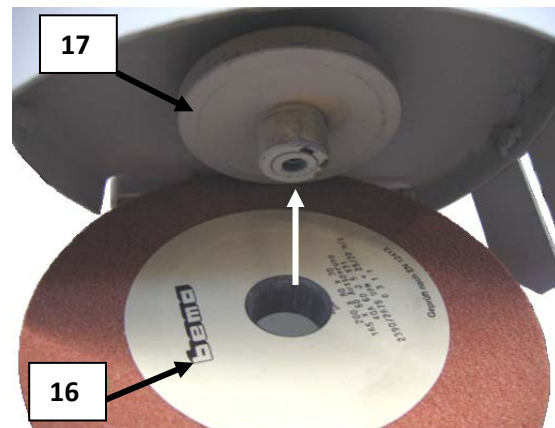


Illustration 12: Assembly of cup wheel



**Position the correct pressure disc surface (pos. 14) onto the cup wheel!**

The pressure disc is equipped with a smooth side and a side onto which a circular ring is screwed. The side which is equipped with the screwed-on circular ring is used as pressing surface for the cup wheel. Never use the smooth side to press the cup wheel, in order to avoid possible stresses within the cup wheel which may result in a cup wheel fracture.

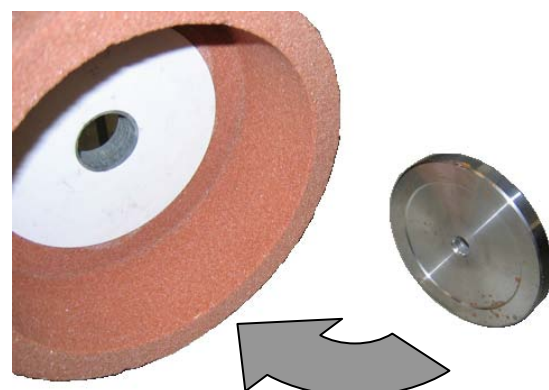


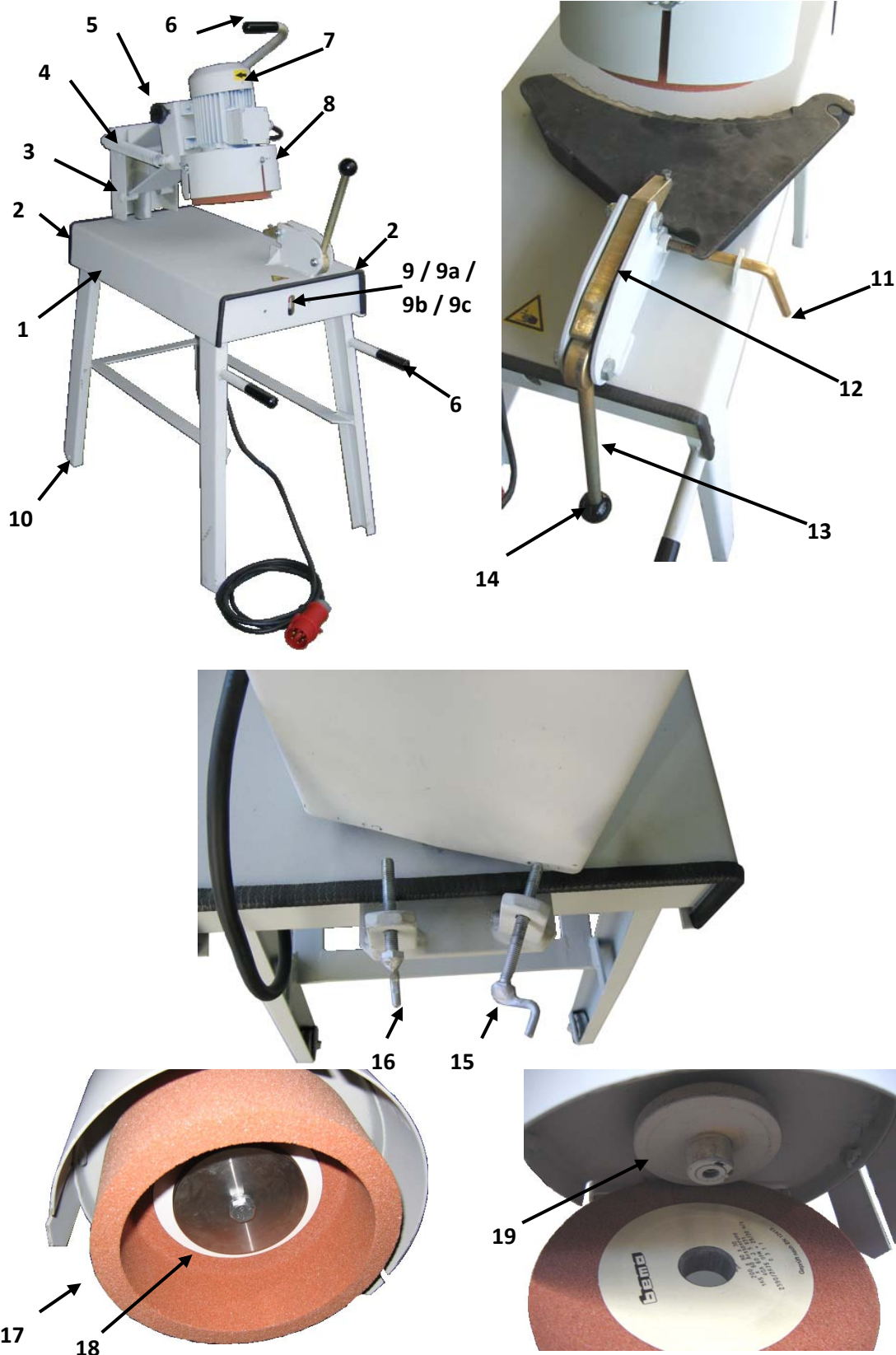
Illustration 13: Installation of pressure disc

## 8. Technical data



<b>Type of machine</b>		Knife grinder
<b>Weight of machine</b>		Approx. 62kg
<b>Drive</b>	<b>Model 400V</b>	Three-phase A.C.motor 400V, 1.1kW Rated speed 3000 r.p.m. Noise level, idle position 90.2 dB(A) Noise level, operating mode 103.3 dB(A)
	<b>Model 230V</b>	Three-phase A.C.motor 230V, 1.1kW Rated speed 3000 r.p.m. Noise level, idle position 90.2 dB(A) Noise level, operating mode 103.3 dB(A)

## Spare parts list



## Spare parts list

Item	Designation	Comment	Code
1	Grinding table	SG.FT.44	8930
2	Edge protection		8931
3	Grinding head with motor seat	SG.FT.27	8932
4	Extension spring		8921
5	Star grip		8929
6	Handle	Ø 20mm, length 115mm	8933
7	Electric motor	400V, 1.1kW	8914
7a	Electric motor	230V, 1.1kW	8939
8	Cup wheel protection	SG.FT.7	8917
9	Protective switch	400V	8918
9a	Protective switch with cable set and plug	400V, 5-core cable ECE plug	8934
9b	Protective switch	230V	8940
9c	Protective switch with cable set and plug	230V, 5-core cable ECE plug	8941
10	Wheel	D=40mm	8927
11	Locking screw	SG.FT.8	8935
12	Tension lever	SG.FT.1	8923
13	Eccentric lever	SG.FT.5	8922
14	Ball head	DIN 319 C 40xM10	8924
15	Stop screw, long	SG.FT.13	8936
16	Stop screw, short	SG.FT.14	8937
17	Cup wheel	200x80x30	8911
18	Pressure disc	SG.FT.3	8913
19	Adapter flange	SG.FT.6	8912