

OPERATION MANUAL FOR CIRCULAR KNIFE SHARPENING MACHINE RMS MANUAL



Original operation manual

Please keep for further use!

CONTENT

EC-Declaration of conformity	3
Transport / Environmental conditions / Set up of the machine /	
General safety advice / Directed use	4
Structure of the machine	5
Technical data	6
Operation	7
Fixation of the circular knife	7
Adjustment of the circular knife	8
Grinding of the circular knife	9
Basic regrinding grinding (Important information, please read!)	10
Standard values for sharpening operation	11
Operation of the manual version	12
Change of the grinding wheel	13
Description of the cooling unit / Basic information about cooling liquids	
Grinding motor information (Important information, please read!)	14
Change of knife support / Spare part list	15
Maintenance / Cleaning / Repairs / Disposal / Warranty	16

EC-DECLARATION OF CONFORMITY

The manufacturer:

Kaindl-Schleiftechnik
Reiling GmbH
Remchinger Straße 4

75203 Königsbach-Stein
Germany

declares, that the machine
described herein:

Circular knife sharpening machine
Type: RMS

refers to the security and health requirements
of the following EC instructions:

EC-Machine instruction (2006/42/EC)
EC-Instruction EMV (2004/108/EC)

Applied harmonises norms:

EN ISO 12100-1 and EN ISO 12100-2; EN 294; EN ISO 13732-1;
EN 61029-1, EN 60204 Part 1; EN 61000-6-1; EN 61000-6-2;
EN 61000-6-3; EN 61000-6-4

Changes in design which affect the technical data, listed in this manual and the directed use, therefore change the machine substantially, make this declaration of conformity invalid!

The documents were compiled by:

Reinhard Reiling

Kaindl-Schleiftechnik
Reiling GmbH
Remchinger Straße 4
75203 Königsbach-Stein

1. TRANSPORT

The circular knife sharpening machine RMS is delivered in a wooden box on pallet. The gross weight (incl. packing) of the machine is around 115 Kg. The transport takes place with pallet truck or forklift.

1.1 ENVIRONMENTAL CONDITIONS

Place the circular sharpening machine RMS only in dry rooms.

Environmental temperature: from +5 to +50°C

Humidity: up to 90%; not condensing

1.2 SET UP

Move the pallet as close as possible to the final position of the machine. Then remove the screw joints between machine and pallet. Before placing the machine at its final position on the floor, screw in, the machine feet from below. Please pay attention that the machine is aligned horizontal on the floor. The alignment should be done by use of a bubble level (Standard model is sufficient). Place the bubble level on top of the cabinet and align in booth direction by adjusting the machine feet.

Please pay attention, that the place of the machine grants a vibration free operation.

1.3 GENERAL SAFETY ADVICE

Read the operating manual intensive!

For damages caused by ignorance or not following the operating manual, no liability is assumed!

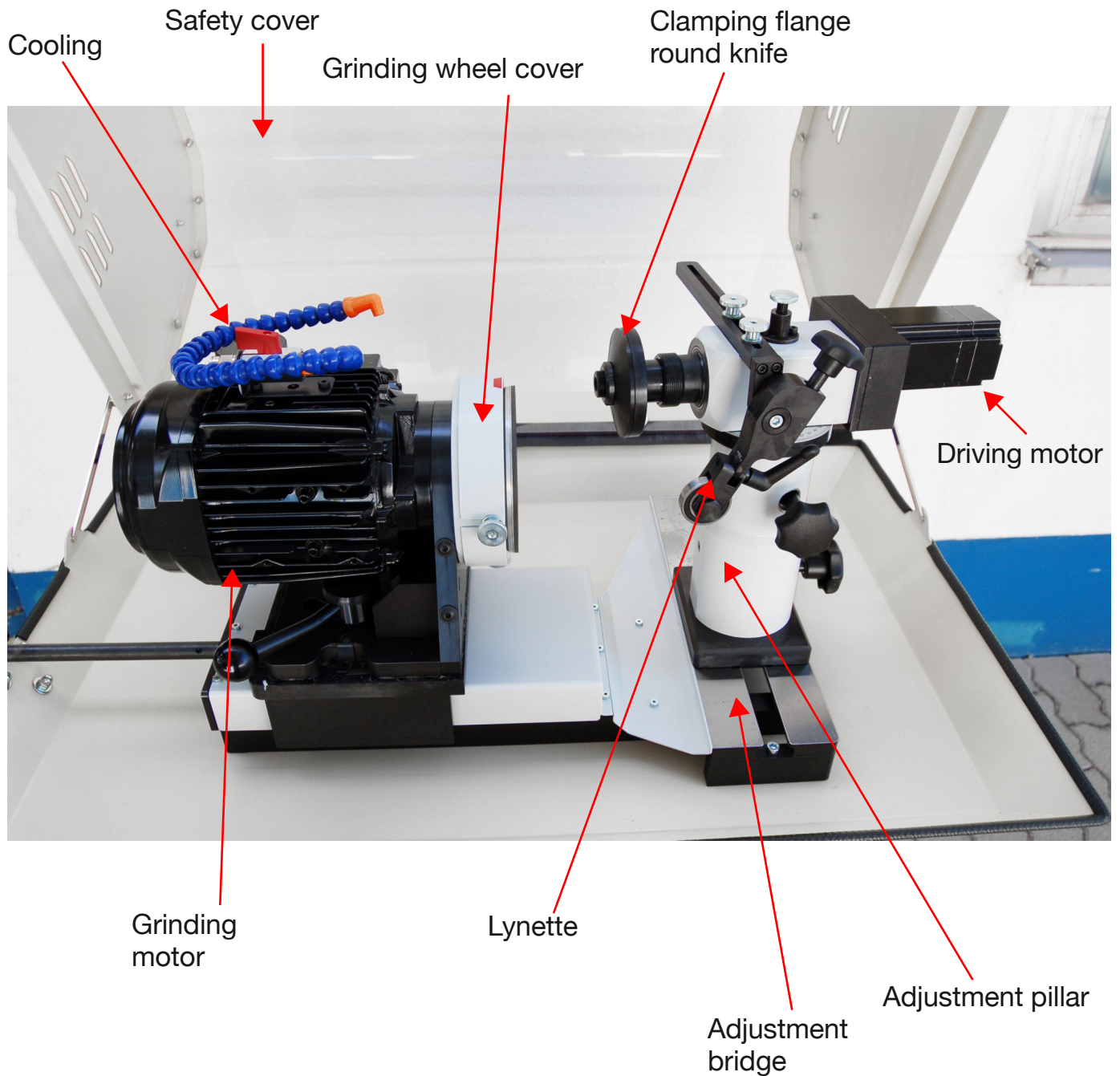
When dealing with circular and shape knife greatest caution is needed, because this can have the sharpness of a razor and it can result in significant cuts if handled carelessly. To largely avoid these, the use of cut protection gloves is strongly recommended.

1.4 DIRECTED USE

The circular knife sharpening machine RMS is exclusively intended for sharpening circular blade in the range of Ø 100 mm to Ø 350 mm. The directed includes also reading this operation manual, as well as keeping all containing directions of use - especially the safety information.

For all personal- and material damages, arising by not intended use, not the manufacturer, but the user of the RMS is responsible!

2. STRUCTURE



3. TECHNICAL DATA

Dimensions

Length:	560 mm
Depth:	820 mm
Height:	1270 mm
Weight net:	Manual 110 Kg
Clamping range / Basic:	Ø 100 mm to Ø 350 mm
Grinding wheel:	Ø 125 x 32 x 20 x 5 x 30 mm
Noise emission:	<70 dB(A)
Spacer rings:	20x22, 20x30, 20x32, 20x40, 20x30 with face

Electronical Data

Drive of grinding spindle:

Motor:	1~ 230V / 50 Hz
Motor speed:	2770 RPM
Power:	0,37 KW
IP code:	IP 55

Flow time of the mounted grinding wheel approx. 10 sec.

Coolant pump:

Motor:	1~ 230V / 50 Hz
Power	Step 1: 0,028 KW
	Step 2: 0,045 KW
	Step 3: 0,063 KW
IP code:	IP 65
Delivery rate:	16-35 l/min

Drive of circular knife:



Only of the manual version.
Continuously variable driving motor for circular knives:

From 2 to 25 RPM

Specifications are subject to change.

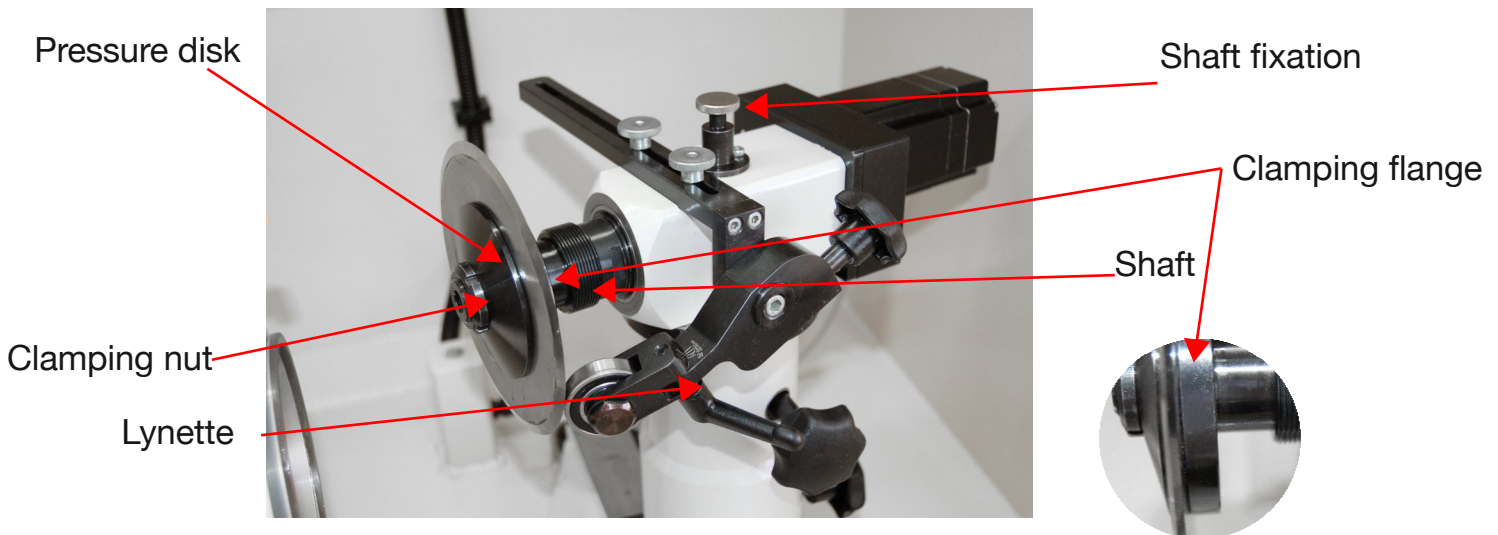
4. OPERATION

4.1 FIXATION OF THE ROUND KNIFE

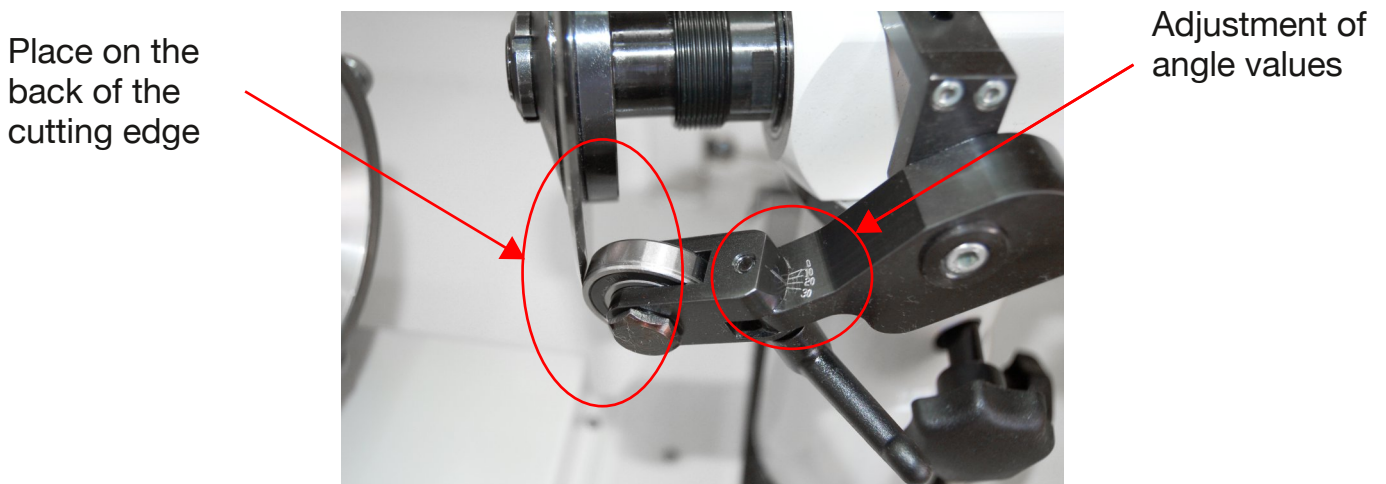
Center the circular knife by selecting the cuttable spacer ring on the clamping flange. Now fix the circular knife with the pressure disk and the fixation nut on the clamping flange (see Picture).

Before tightening up or loosening the fixation nut, the shaft fixation pin must be pressed down. Turn the motor shaft with the c-wrench till the pin locks in the shaft fixation.

!!! Attention when tightening and loosening of the circular knife. Risk of injury !!!

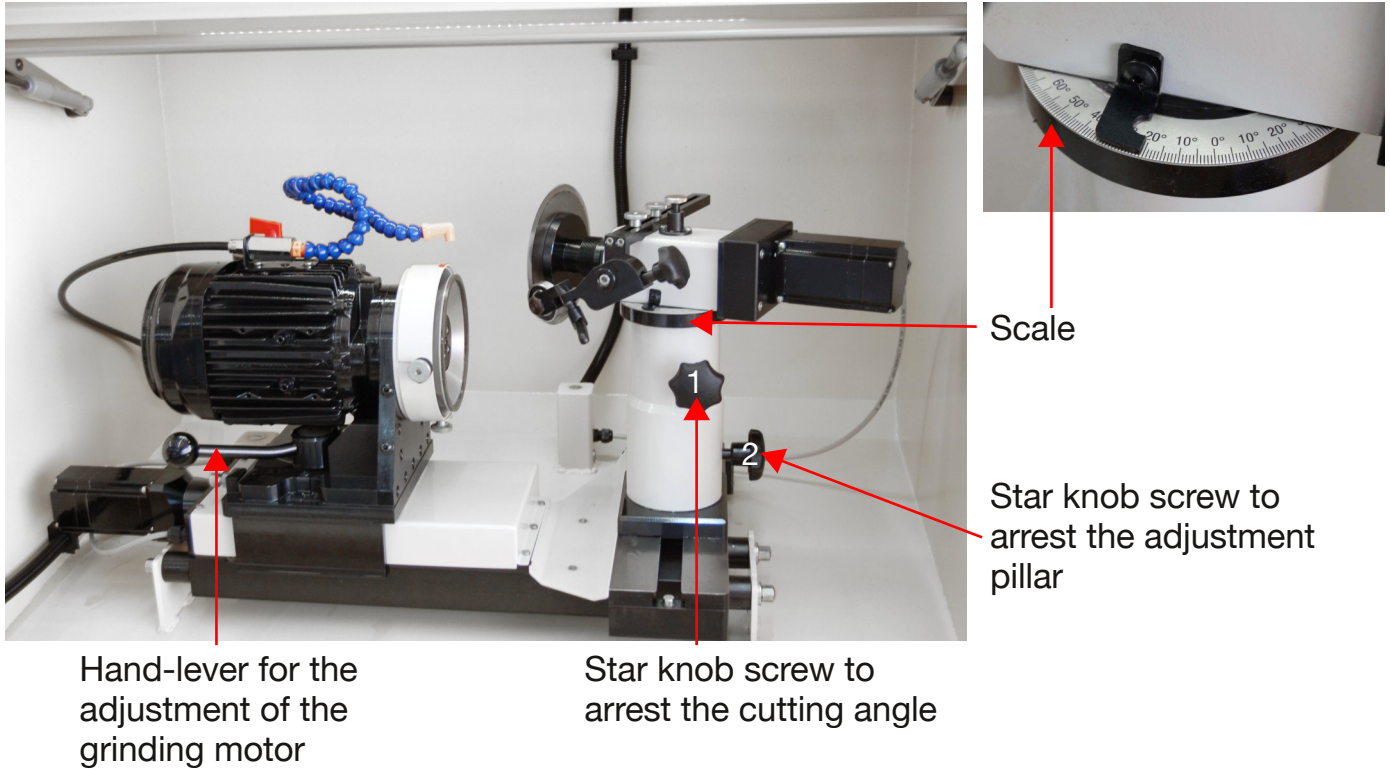


After you have fixed the circular knife, place the lynette on the back of the knife. Align the lynette in the way that the wheel is turning softly (e. g. circular knife 10°, lynette approx. 15°). Depending on the type of circular knife, you can adjust the angle of the lynette head correspondingly. The lynette is to support of the circular knife and grants a burr free bevel.

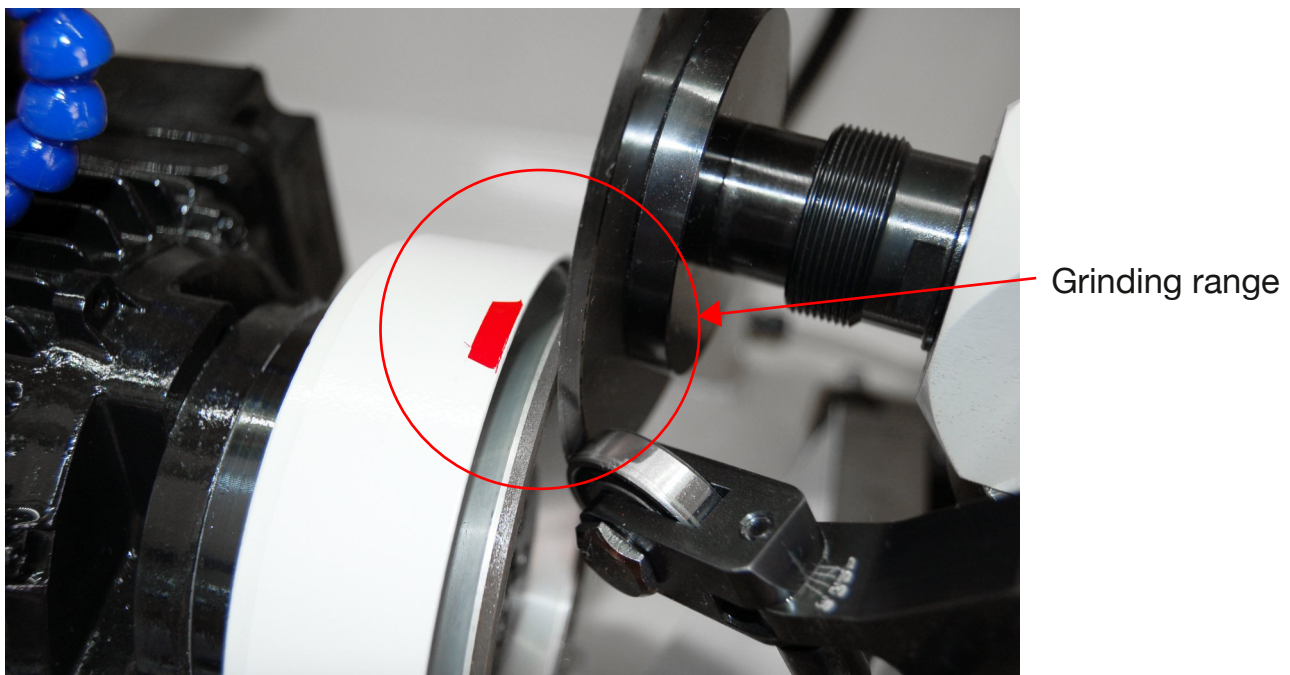


4.2 ALIGNMENT OF CIRCULAR KNIFE

By opening the star knob screw (1) you can now adjust the angle value of your round knife.



After you have set the angle, open the star knob screw (2) and move the adjustment pillar in the way that the cutting edge of the round knife is inside the marked grinding range.



!!! IMPORTANT INFORMATION - PLEASE READ !!!

5. BASIC REGARDING GRINDING

Please keep in mind, that grinding basically is a form of soft treatment. For getting optional results, please pay attention to some elementary rules.

Physically grinding is a interaction between material of the workpiece, the suitable abrasive, binding of the abrasive, grit size, cooling liquid and finally the well matched feeding size as well as halt- and grinding cycles without feeding.

For achieving perfect precision it is basicly considered using small feeding sizes (4 μ), halt cycles of minimum 15 to 30 seconds at a speed of 10 to 20 rpm, cooling liquid directed to the circular knife.

It is absolutely recommended to focus your attention to the grinding cycles with no feeding. This timespan should last a long until you hear no more noise from the grinding wheel. That grants that the complete feeding size has been worked off.

Surely grinding also means scrub treatment but this is with it's parameters quite sobering for an amateur in grinding. Scrubbing means very coarse grit, open bonding of the grinding wheel, feeding of max. 12 μ , halt periods of min. 10 - 30 seconds, at knife rotation of 15 to 25 rpm and a lot of cooling liquid.

As mentioned above, these parameters are only a rough guideline which grants that chooses parameters can be processed by the machine. Finally, factors as grinding medium and material has to be considered and specially selected for each application.

Material: HSS, high-grade steel hardened, steel hardened etc. can successfully sharpened with a corundum or CBN grinding wheel.

By use of resinoid bond abrasive material, the cooling liquid should have min. 10% oil content, as this abrasive bond produces a considerable rubbing on the workpiece causing more heat.

Material: Carbide steel glass, ceramics can be sharpened successfully by a diamond wheel. As written before, an adequate oil content has to be considered.

6. STANDARD VALUES FOR THE SHARPENING PROGRAM

Scrub treatment	
Material:	Carbide
Abrasive:	Diamond
Grit size:	D 252
Feeding:	8-12 μ
Halt time:	16 sec
Spark time:	80 sec
Knife speed:	20
Cooling liquid:	Emulsion 10-15 %

Finishing treatment	
Material:	Carbide
Abrasive:	Diamond
Grit size:	D 76
Feeding:	4 μ
Halt time:	25 sec
Spark time:	120 sec - 150 sec
Knife speed:	12
Cooling liquid:	Emulsion 10-15 %

Scrub treatment	
Material:	High grade steel
Abrasive:	CBN
Grit size:	B 252
Feeding:	8 μ
Halt time:	20 sec
Spark time:	100 sec
Knife speed:	18
Cooling liquid:	Emulsion 10-15 %

Finishing treatment	
Material:	High grade steel
Abrasive:	CBN
Grit size:	B 76
Feeding:	4 μ
Halt time:	25 sec
Spark time:	120 sec - 150 sec
Knife speed:	12
Cooling liquid:	Emulsion 10-15 %

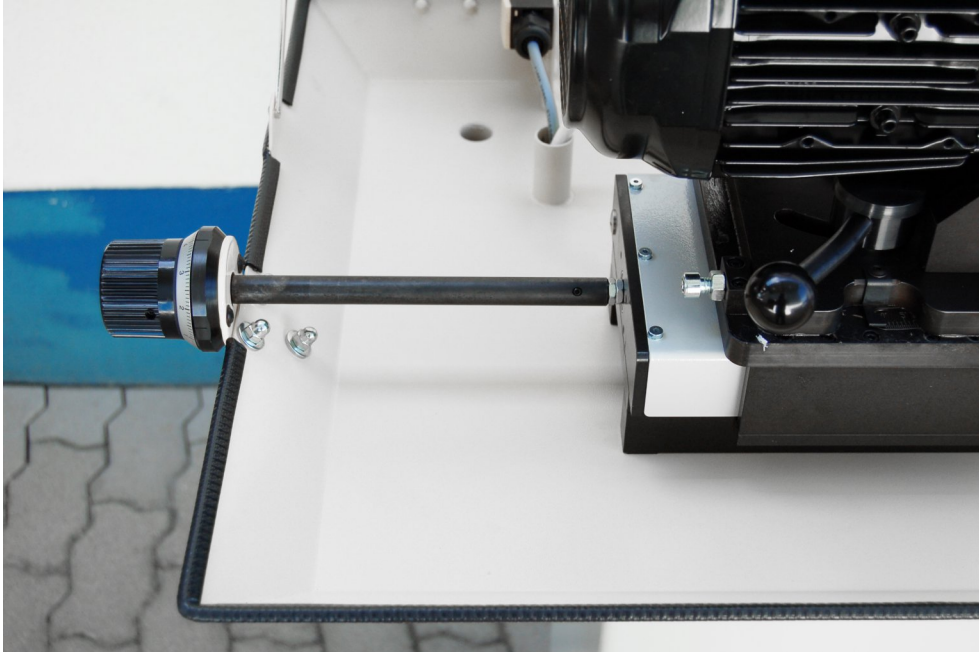
Scrub treatment	
Material:	HSS, harted steel
Abrasive:	CBN
Grit size:	B 252
Feeding:	8 μ
Halt time:	20 sec
Spark time:	90 sec
Knife speed:	22
Cooling liquid:	Emulsion 10-15 %

Finishing treatment	
Material:	HSS, harted steel
Abrasive:	CBN
Grit size:	B 76
Feeding:	4 μ
Halt time:	25 sec - 30 sec
Spark time:	120 sec - 180 sec
Knife speed:	10
Cooling liquid:	Emulsion 10-15 %

The values listed are our recommended guidelines.

7. OPERATION MANUAL VERSION

The feeding of the manual version is made with the handwheel, placed on the left side of the machine.



ON/OFF-switch.

The machine only runs when the safety protection is closed.

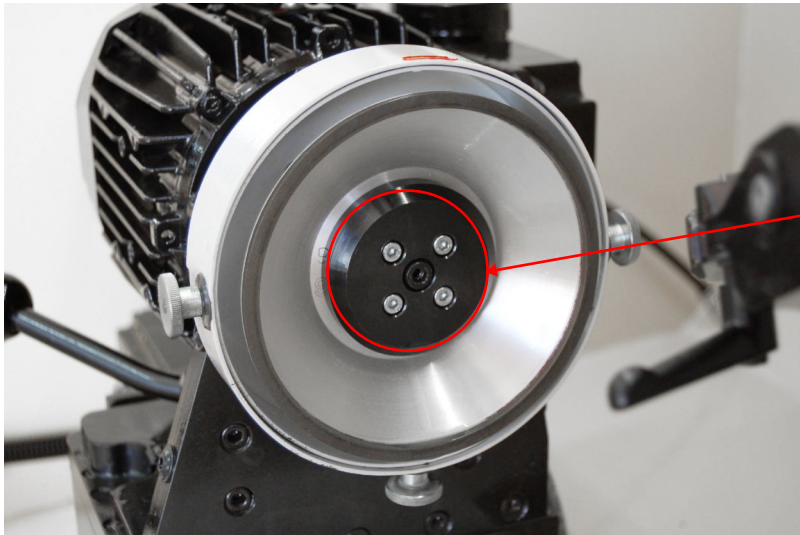


8. CHANGE OF THE GRINDING WHEEL

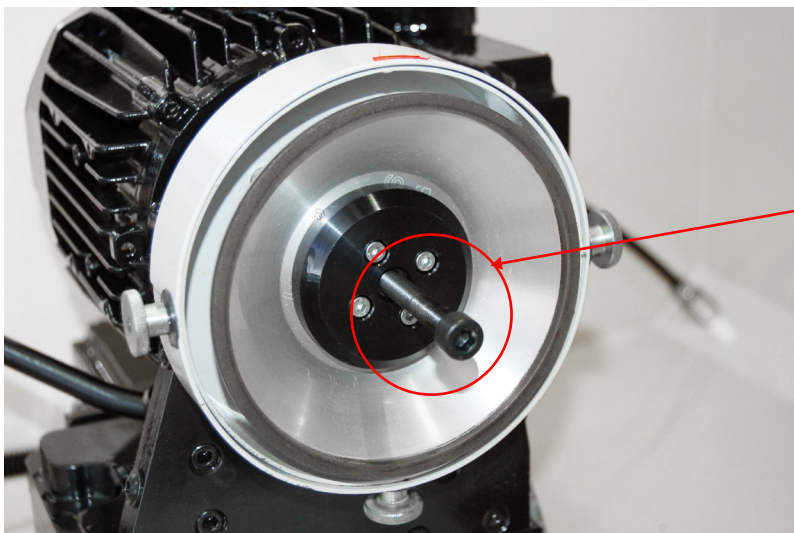


First unplug from electric current!

Imperatively also remove the circular knife before!



Open the hexagon screw M6



Screw in the lifting screw M8 for lifting the grinding wheel support with the grinding wheel

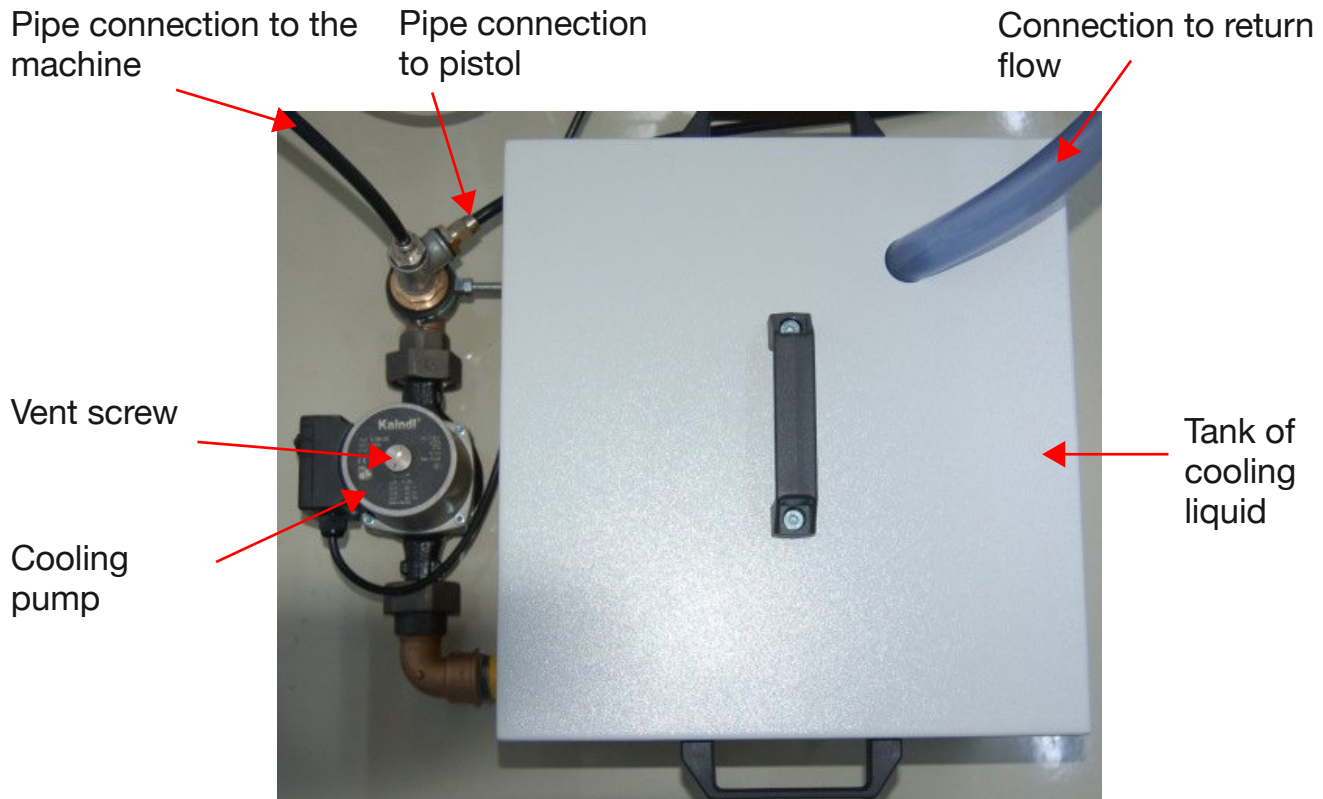
Unscrew the allen screw M6 with the supplied allen wrench SW 5.

Screw in the lifting screw M8 for lifting the grinding wheel support with the grinding wheel.

Place the new grinding wheel on the motor shaft and pay attention that the driving pin of the grinding wheel support is placed in the groove of the motor shaft.

Now tighten the grinding wheel support with an allen wrench.

9. DESCRIPTION OF THE COOLING UNIT



Before the first start, please vent the cooling liquid pump!
 Please fill up the tank to the top level of the pump
 Electric plug for cooling unit (on the back of the cabinet)



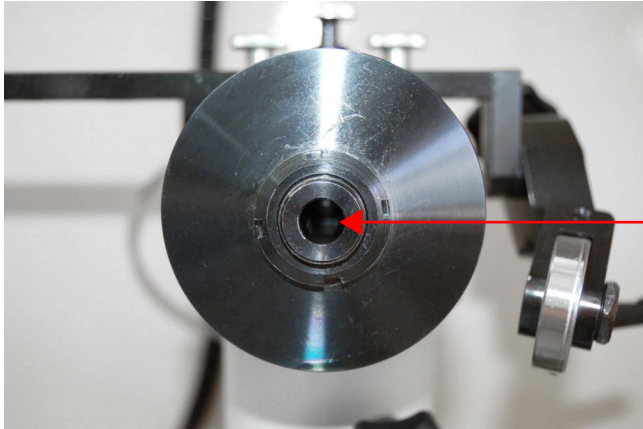
Important information regarding cooling liquid:

Only use water-soluble emulsions on mineral oil base. By use synthetic products, the painting and plastic parts can be damaged. We will not accept any responsibility for these damaged.

When proving the cooling liquids, pay attention to the directives of the manufacturer.

Please pay attention to the current waist disposal regulations.

10. CHANGE OF THE SUPPORT FOR THE CIRCULAR KNIFE



Allen screw

For changing the support, loosen with the supplied allen wrench SW 5 the allen screw M6. Screw in the provided allen screw M8 and lift the support from the cone.

11. WIRING DIAGRAM

The wiring diagram is placed in inside the control cabinet behind the door.

GRINDING MOTOR: IMPORTANT INFORMATION

The grinding motor of the circular knife sharpening machine can heat up higher during operation.

Please pay attention when touching the grinding motor.

12. MAINTENANCE

The circular knife sharpening machine RMS manual should be cleaned occasionally from grinding dust with a soft brush. Persistent dirt, please clean with a usual in trade machine cleaner. Occasionally check the electric cable and plug for damage.

13. CLEANING AND GREASING

For granting full functionality of the circular knife sharpening machine RMS manual should be cleaned periodically from grinding dust with a soft brush. Also regularly clean the cooling ribs and the ventilation (fan propeller/ventilation grille) of the grinding motor. Persistent dirt, please clean with a usual in trade machine cleaner. Occasionally check the electric cable and plug for damage. For preventing corrosion, provide blank and blue steel parts with a slight film of oil.

! Important ! The protective cover plates of the machine protect the guidances, spindles and switches below from dirt and cooling liquid. So when cleaning the machine with the cooling liquid gun, do not undermine these protective cover plates.

14. REPAIRS

Repairs on the machine can only be carried out in our company Kaindl or by persons authorized by us. The change of wear parts, as the diamond wheel, can be replaced by the user.

The exchange of electronic parts may only be done by an electro engineer!

15. DISPOSAL OF THE MACHINE INSIDE EU

When sending back the machine to us (transport charges prepaid), the company Kaindl-Schleiftechnik Reiling GmbH grants for the competent disposal as per the currently in force of the European waste electrical regulations.

16. WARRANTY

The warranty is 12 months from date of shipment and refers to a one shift work. For multi-shift work, the warranty is 6 months from date of shipment under condition of a appropriate use of the machine.

The guarantee includes the costs for replacing of defect parts and assembly groups, including the required working time. Replacement can also included repaired, used parts and assemblies.

Excluded from any guarantee are:

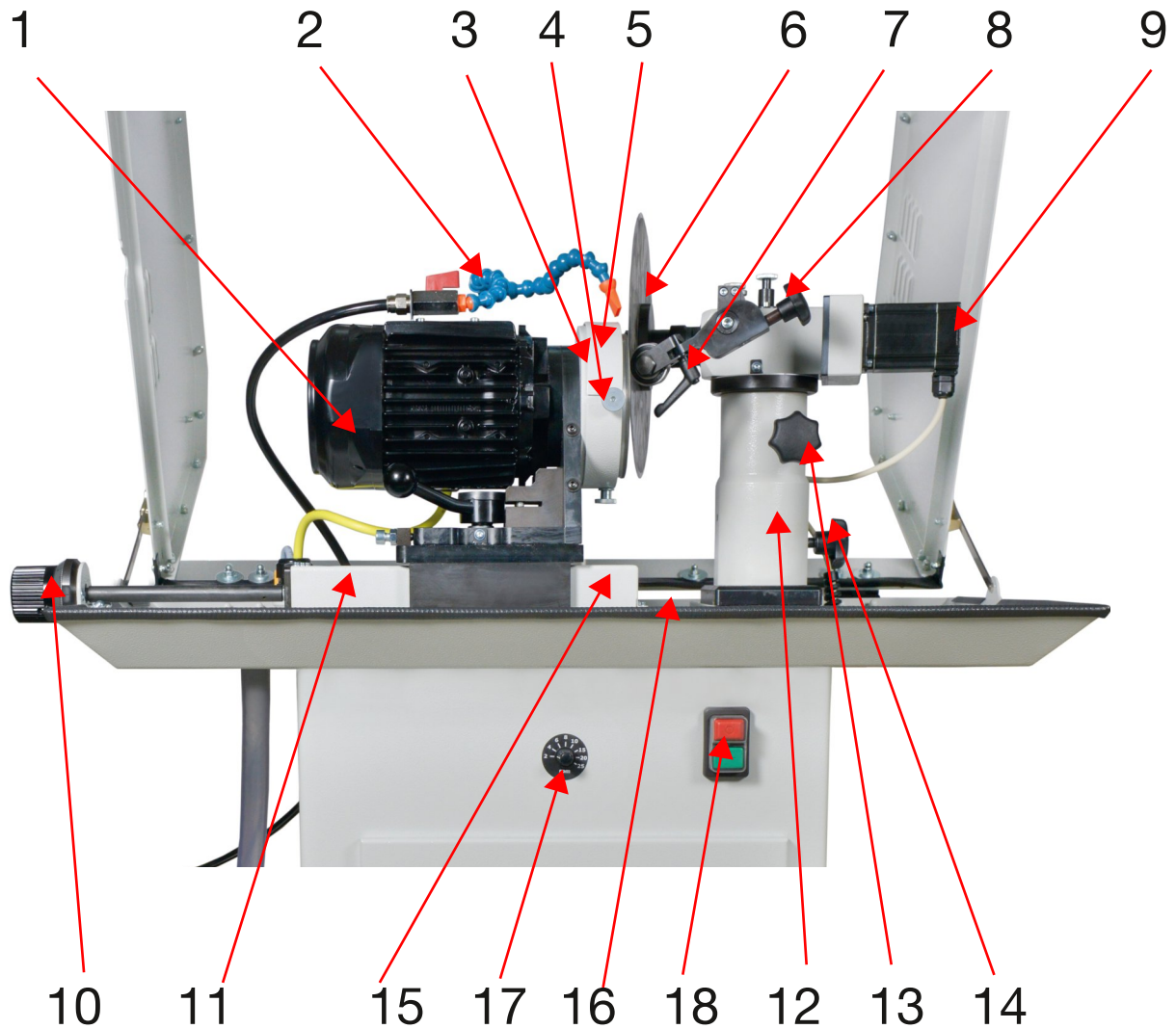
- Wear parts
- Transport damage
- Damage by improper use of the machine
- Damage by program parameter assignment
- Damage by use of force
- Damages and consequential damages caused by breach of the duty of taking care of the user
- damages caused by aggressive detergents as corrosive or caustic cleaning materials, solvents, etc. or aggressive cooling lubricants

In case of a warranty claim, we ask you to inform us about the type, serial No. and year of construction of the machine.

Without information of year and number of machines, the processing of your warranty claim is not possible! Returns have to be authorized by us, before shipment. We reserve the right to charge you with the transportation cost if the return was not authorized.

Spare parts or replacement parts are transferred absolutely in our ownership.






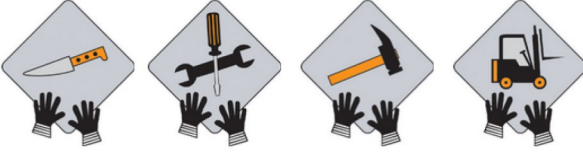


17. SPARE PART LIST RMS MANUELL



- | | | | |
|----|--------------------------------|-----|--|
| 1. | Drive motor of grinding wheel | 10. | Manual feeding drive motor (Handwheel) |
| 2. | Coolant pipe with gate valve | 11. | Complete feeding unit |
| 3. | Grinding wheel protection | 12. | Collar adjustable |
| 4. | Grinding wheel | 13. | Star knob screw for fixation |
| 5. | Grinding wheel support | 14. | Star knob screw with bolt |
| 6. | Support for circular knife | 15. | Cover plate feeding unit |
| 7. | Lynette bearing | 16. | Cover sheet |
| 8. | Lynette support | 17. | Adjustable drive motor (controlling) |
| 9. | Drive motor for circular knife | 18. | On/Off switch |

Kaindl-Schleiftechnik, Reiling GmbH



Item No.:		Model name:		
18235		CUTGRIP		
Design & Construction				
Description:	5-finger cut protection gloves (10 Gauge) made of 76% KEVLAR® in black and 24% PES / glass. Extra long knite waistband as pulse protection. With slip resistant PVC – nup like surface.			
Sizes:	09  green			
	10  blue			
	11  brown			
	12  black			
Colors:	black			
Characteristics:	76% KEVLAR® and 24% PES / glass as protection against cuts <ul style="list-style-type: none"> • very high cut resistance • Elastic waistband for good fit • extra long knite waistband The gloves do not contain substances, known to cause allergies			
Directions for use:				
Scope of application:	Automotive industry, Metalworking industry, Assembly, Packing industry Transport			
				
Restrictions:	The gloves do not protect against chemical, bacteriological, electrostatic and thermal dangers. They cannot be used, when working with turning objects. Gloves which are badly damaged and provide no more protection, have to be changed.			
Launder:		60°C machine washable. Do not use bleaching- and oxidising agents.		
Storage:	Do not expose to direct sunlight!			
Pictogram and power stage as per EN 388:2003				
BP 60033128 0001 Report: 21151902 003 & 004	EN 388 	Demand	LS	0197 TÜV Rheinland LGA Products GmbH – Tillystraße 2 – D-90431 Nürnberg/Germany
		Abrasion resistance		
		Cutting resistance	5	
		Tear resistance	4	
		Penetration resistance	4	
Source of supply:	Kaindl-Schleiftechnik, Reiling GmbH, Remchinger Str. 4, D-75203 Königsbach Stein- Germany Phone: +49(0)-7232-40010, Fax: +49(0)-7232-400130 www.kaindl.de info@kaindl.de			



Kaindl-Schleiftechnik, Reiling GmbH

Kaindl®



Dear customer,

for clamping- and unclamping of the tools, please always wear the appropriate cut protection gloves.

To the first delivery, we add a pair of special cut protection gloves. These protect you from cuts of the tool cutting edges and possibly resulting burr.

For repeat ordering, please use the following item numbers:

5 pairs/package

Cut protection glove	CUTGRIP, size 9 (M),	Item No. :18234
Cut protection glove	CUTGRIP, size 10 (L),	Item No.: 18235
Cut protection glove	CUTGRIP, size 11 (XL),	Item No.: 18236
Cut protection glove	CUTGRIP, size 12 (XXL),	Item No.: 18237

