

# GRINDING MACHINES



Wide range of equipment and equipment varieties

 **MAIER**



# MAIER-GRINDING MACHINES

*...with the wide range of grinding devices for knives from sewing machines, cloth cutting machines textile machinery and many others.*



Knives and scissors must be sharpened economically and to the correct angle. In order to ensure a perfect cutting performance of the knives in the machine they must cut like new after having been reground.

Quick and precise grinding is only possible on a machine with the appropriate grinding equipment. The machine and the grinding devices must be exactly and perfectly compatible with each other.

MAIER-UNITAS has been manufacturing grinding machines specifically for these applications for over 60 years. Since years the knife holder systems and grinding devices developed by MAIER-UNITAS are well-proven and guarantee a perfect finish.

For the different types of knives there is always a special knife holder available guaranteeing the correct cutting angle and stamped with the class of the sewing machine or the knife number. The respective knife is placed in the appropriate groove and clamped tightly.

This will guarantee an easy and quick regrinding of the knives to the correct angle.

**The knife holder mounting on the grinding machine remains unchanged also in case of model changes so that even after many years holders for new sewing machine classes may be ordered with confidence.**

The illustrations and descriptions on the following pages will help you to find the appropriate machine model and the correct knife holder/grinding equipment.

When ordering knife holders, please state our order number; in case this number is unknown, please indicate the sewing machine make and class and the spare part numbers of the knives. An even easier way is to send us samples of the knives.

**The well-proven MAIER knife grinding machines are capable of grinding perfectly all steel qualities, also carbide-tipped knives.**

These knives require a diamond grinding wheel.

All grinding wheels are flange mounted. Therefore, they can be quickly replaced and are always adjusted to accurate running.

MAIER grinding machines correspond to the EE-regulations:

Machines 89/392/EWG, Annex IIA and are being delivered with the declaration of conformity, the respective operating instructions and the CE-sign.

In order to correspond to the prevailing regulations, always wear protective glasses when grinding!

# UNIVERSAL KNIFE

## Model 68/1

## GRINDING MACHINE

### *The large and efficient knife grinding machine.*

This is the ideal, universally used grinding machine for the sewing machine mechanic. Table mounted model with two grinding stations and reversing switch for forward and reverse motion, precision swing support with vernier and robust grinding shaft bearings. Feed accuracy at the swing support 0.02 mm per vernier division mark. Grinding shaft being driven by V-belt.

The left-hand grinding station (cup grinding wheel) is used for grinding knives with the appropriate grinding equipment. The right-hand grinding station is available for free-hand grinding and polishing operations.

Knife holders for sewing machine knives, special grinding devices and grinding devices for the mechanic see page 12.

Alternative equipment see page 14.

#### *Technical data:*

*Grinding spindle speed approx. 4500 rpm.*

*Left-hand grinding station:*

*Cup grinding wheel n° 51/1*

*Right-hand grinding station:*

*flat grinding wheel n° 52/1*

*Standard motor:*

*3-phase 230/400 V, 50 c/s, 0,25 kW*

*Motor on request:*

*Alternating current 230 V, 50 c/s, 0,25 kW*

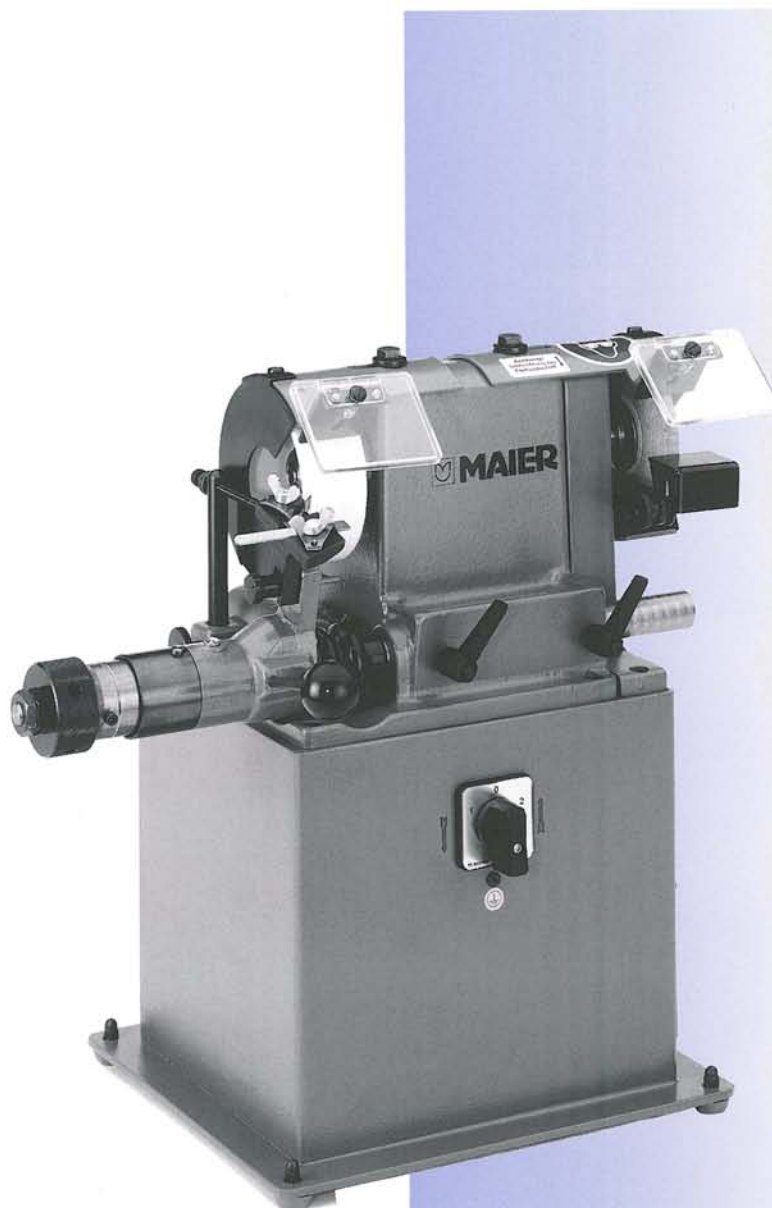
*or special voltage e.g. 110 V, 60 c/s.*

*Dimensions: 450 x 260 x 440 mm*

*Net weight less knife holder: 25 kg*

*Gross weight less knife holder (cardboard box): 29 kg*

*Packing measurements: 50 x 33 x 50 cm*



# KNIFE AND SCISSOR

## Model 82-100

## GRINDING MACHINE

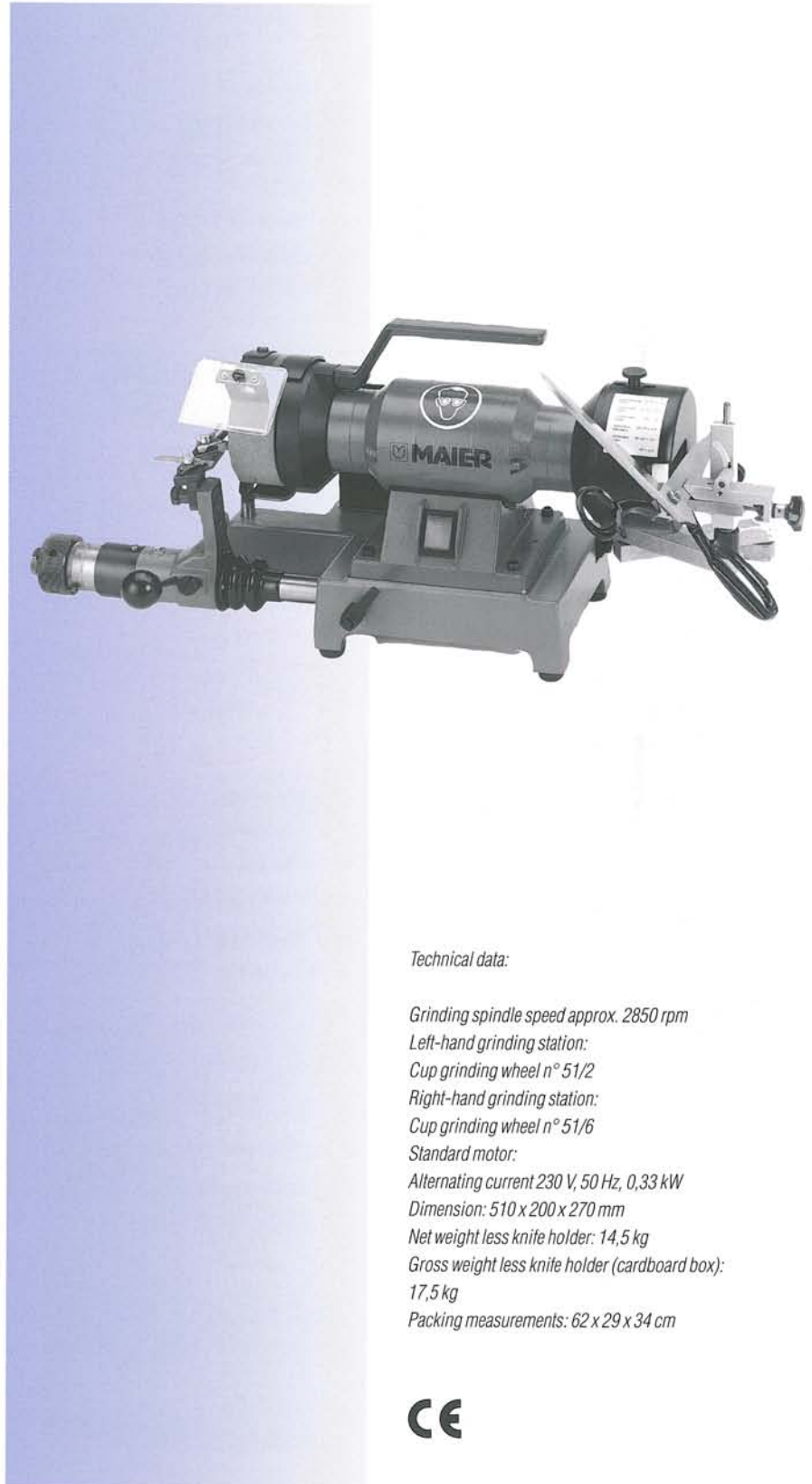
*The compact, portable grinding machine for grinding knives and scissors*

The flanged grinding wheels are directly mounted on the motor shaft. The left-hand grinding station with the precision swing arm and vernier permits the application of nearly all available grinding devices for sewing machines knives, cloth cutting knives etc. Feed accuracy at swing support 0.02 mm per vernier division mark.

The cup grinding wheel may be exchanged with a flat grinding wheel, felt disc or buffing wheel for grinding and polishing operations.

The right-hand grinding station is reserved for scissor grinding. Scissors of all types and sizes are tightly clamped in the holding device. The easily movable grinding arm guarantees secure guiding. Cutting angle adjustable from 0-60°.

The slight burr caused by the grinding process will be removed by means of the dressing stone/oil stone.



*Technical data:*

*Grinding spindle speed approx. 2850 rpm*

*Left-hand grinding station:*

*Cup grinding wheel n° 51/2*

*Right-hand grinding station:*

*Cup grinding wheel n° 51/6*

*Standard motor:*

*Alternating current 230 V, 50 Hz, 0,33 kW*

*Dimension: 510 x 200 x 270 mm*

*Net weight less knife holder: 14,5 kg*

*Gross weight less knife holder (cardboard box):*

*17,5 kg*

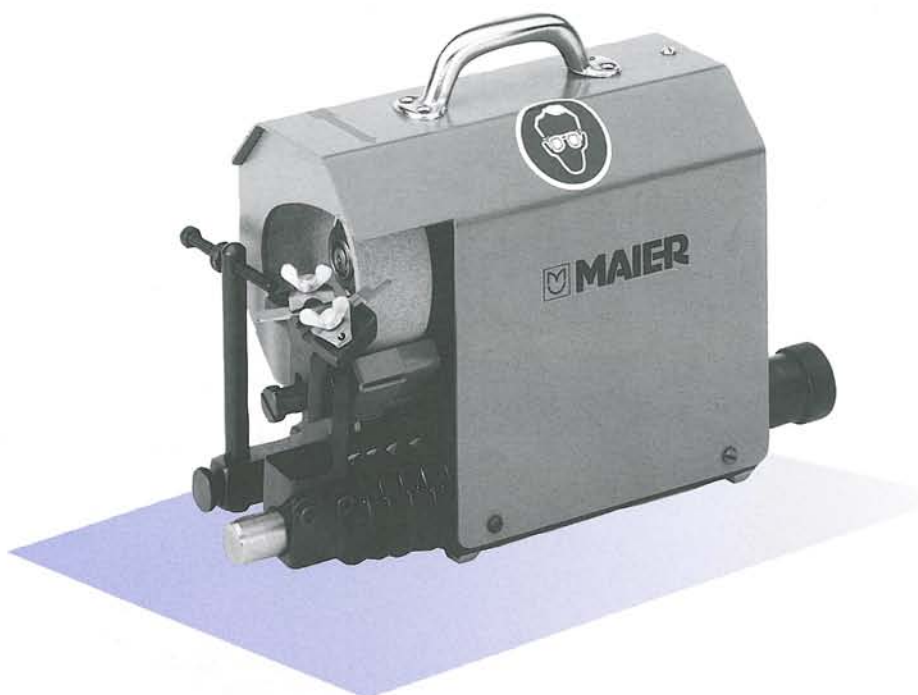
*Packing measurements: 62 x 29 x 34 cm*



# KNIFE GRINDING MACHINE

## Model 90

*The low-priced, portable knife grinding machine for grinding of knives of many sewing machine makes.*



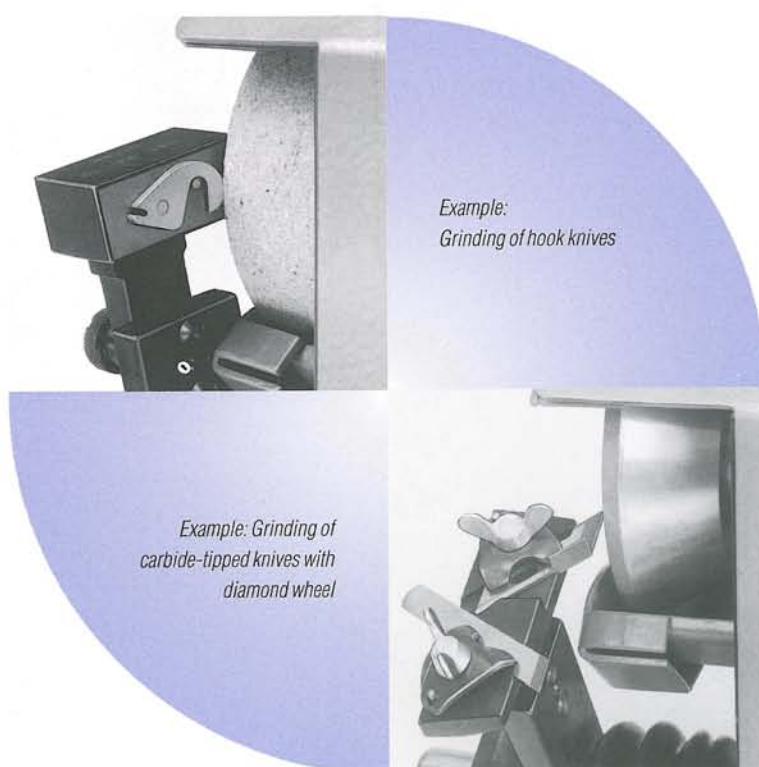
For this model a wide range of knife holders is available for all fields of application.

Owing to the simpler design of the support, the use of special grinding devices will not be possible. The flanged cup grinding wheel is directly mounted on the motor shaft.

The robust grinding shaft bearings permit also the use of diamond grinding wheels for grinding of carbide-tipped knives.

The model 90 is especially suitable:

- for smaller shops
- for departments/branches of large enterprises
- for mechanics who want to grind knives on this lightweight, handy machine in the premises of the customer.



#### Technical data:

Grinding spindle speed approx. 2850 rpm  
(110 V, 3350 rpm)

Cup grinding wheel n° 51/2

Standard motor:

Alternating current 230 V, 50 Hz, 0,15 kW

Motor on request:

Alternating current 110 V, 60 Hz, 0,15 kW

Dimension: 330 x 140 x 235 mm

Net weight less knife holder: 12 kg

Gross weight less knife holder (cardboard box): 13 kg

Packing measurements: 42 x 27 x 31 cm



# SCISSOR GRINDING MACHINE

## Model 111

DBP

*The special scissor grinding machine sharpening all types and sizes of scissors.*

An ideal machine for the sharpening of cloth cutting scissors, embroidery scissors, pinkers, left-hand scissors, household scissors, nail scissors and many others. The scissors are tightly fixed and need not be disassembled. The easily movable grinding arm guarantees secure grinding thus ensuring no displacement during grinding. The cutting angle may be adjusted from 0-60°. Grinding and dressing is performed in one fixture. Grinding on the left-hand and dressing on the right-hand.

Result: smooth cutting scissors which often cut better than new ones.

The model 111 solves the problem of poor cutting scissors in a **simple and very economical way**. Dull scissors can be reground immediately, without waiting time.

The favourable price of the machine allows you to place it in every department.

The model 111 is a scissor grinding machine not only for the non-professional but also for the professional. It satisfies the demands of high quality sharp scissors cutting edges.

Capacity: 20-30 scissors per hour.

*Technical data:*

*Left-hand grinding station:*

*flat grinding wheel n° 52/11*

*Right-hand grinding station: dressing stone n° 69/3*

*Motor: alternating current 230 V, 50 Hz, 375 W*

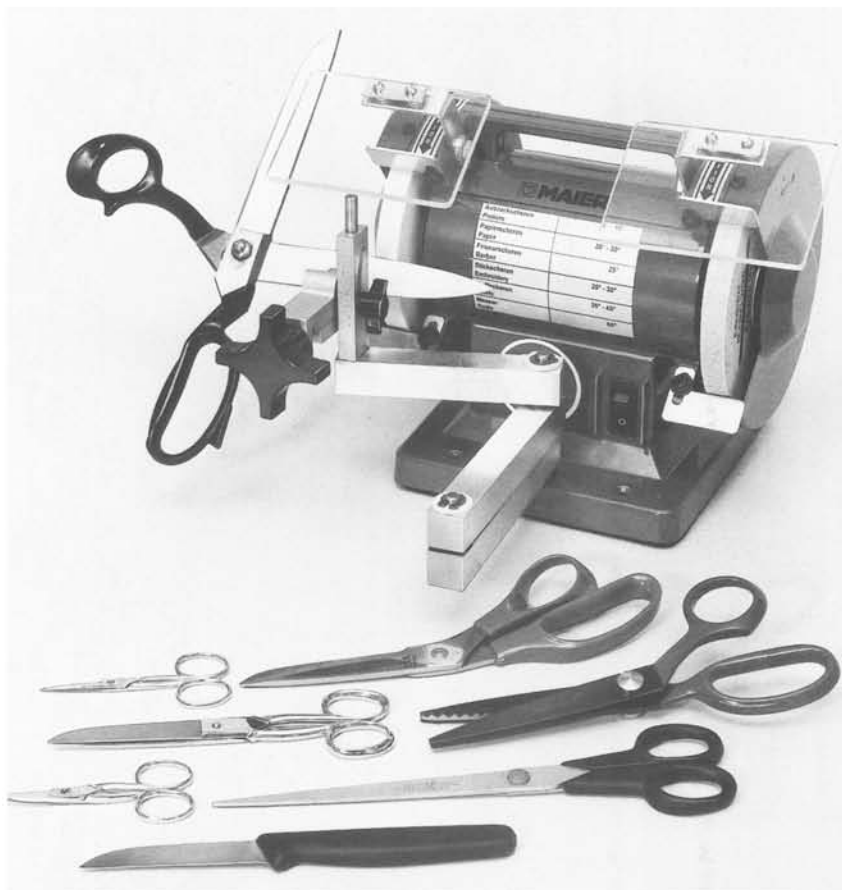
*Speed: 2850 rpm*

*On request also available in 110V, 60 c/s*

*Gross weight (cardboard box): 6,3 kg*

*Net weight: approx. 5,6 kg*

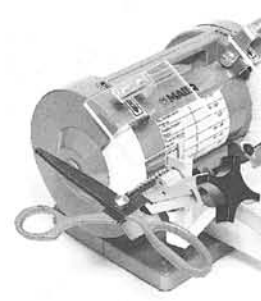
*Packing measurements: 29 x 27 x 24 cm*



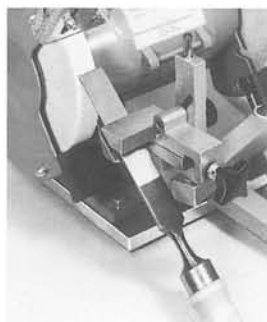
*Grinding scissors*



*Dressing scissors*



*Grinding of pinkers*



*Clamping device for cutting-off tool  
Order-n° M/111.40*



*Tongs to adjust the clamping bolt on scissors. Order-n° M/100.41*



# KNIFE HOLDERS

*Knife holders are available for nearly every industrial sewing machine knife.*

The knives are inserted in the groove provided where they are tightly clamped. This ensures that they are always ground to the correct angle. On the knife holders there are stamps showing the sewing machine class and knife numbers resp. and the sewing machine make.

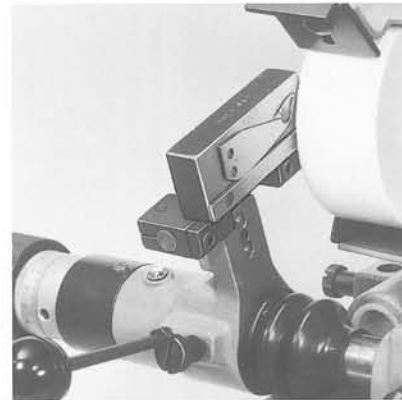
A broad range of knife holders is available ex stock. The offer will be permanently extended and amended whenever new sewing machine classes appear on the market.

Whenever you have any questions, please indicate the number of the knife and contact your dealer or directly our company.

According to your request, knife holders can always be manufactured in a special production. In this case, new sample knives with indication of the sewing machine make, the class and the knife number must be made available to us.



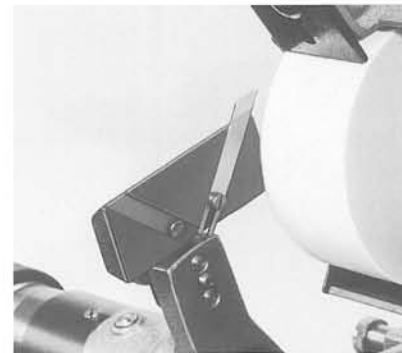
*Angular knife and bottom knife*



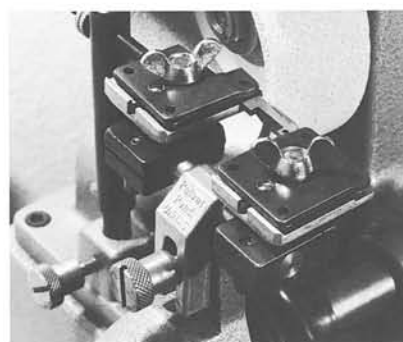
*Flat grinding*



*Carbide-tipped knife with diamond grinding wheel*



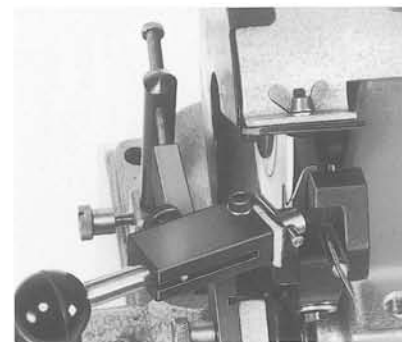
*Knife with slim bevel*



*Needle plate insert*



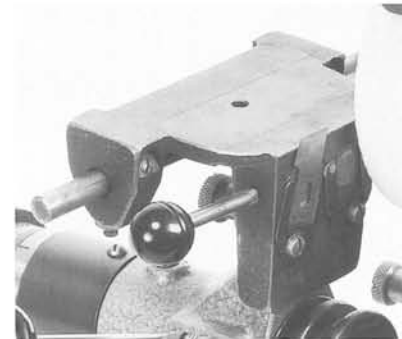
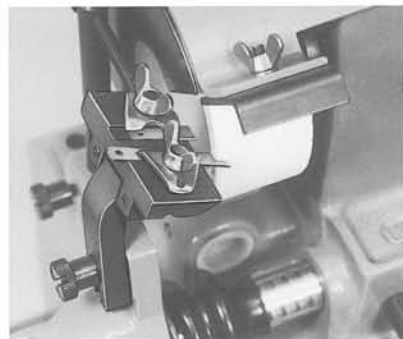
*Straight upper knife (with finger) and bottom knife*



*Lining trimmer (shoe trimming knife) for plunge grinding*



6 *Lining trimmer (shoe trimming knife)*



*Buttonholeknife*



# SPECIAL GRINDING DEVICES



By means of the round knife grinding device with motor drive M/40, the toothed seamless knives from hosiery circular knitting machines of many makes, e.g. BENTLEY - LONATI - NAGATA - SANGIACOMO - SANTONI - SAVIO - SOLIS and many others, can be reground in a simple and fast way.

The mounting flanges especially produced for these knives ensure absolutely concentric running.

The sensitive feed at the swing support takes care for a very accurate and precise internal grinding of the teeth without drawing the temper during the process.

For grinding these toothed round knives we recommend the borazon cup grinding wheel.

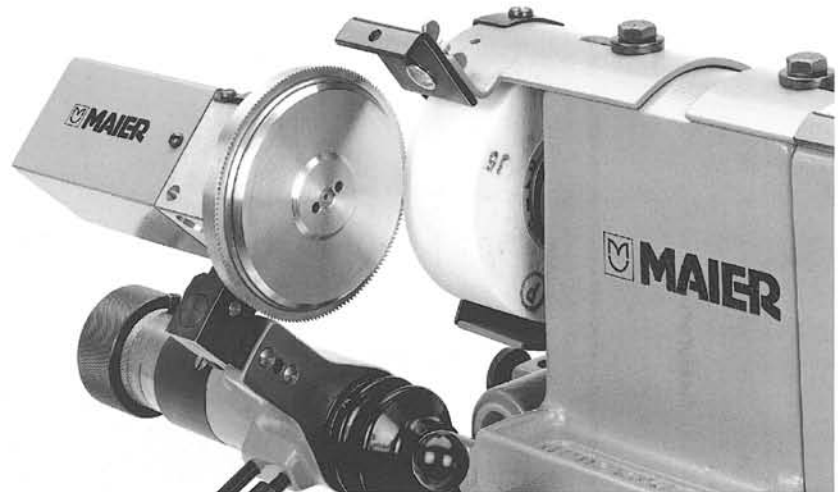
For the multitude of different designs of these seamless knives appropriate mounting flanges will be produced each time and exactly ground to the knives.

If the knives are flat and do not offer a clamping possibility by means of a clamping disc, magnets are used for the clamping of the knives.

**Therefore, we ask you to submit us samples of the different knives to be ground together with any inquiries/orders you will send us.**

The grinding devices are suitable for the model 68/1.

*The optimum grinding device for seamless knives from hosiery circular knitting machines*



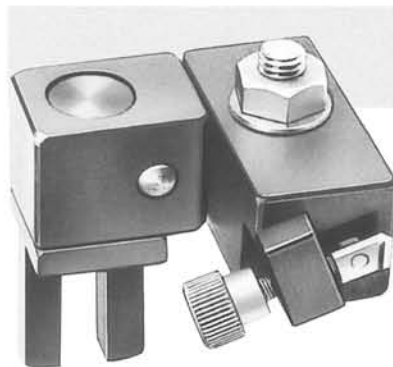
*Grinding device for seamless knives up to 127 mm/5" diameter: Order-n° M/40*

*Borazon grinding wheel with flange 61/1: Order-n° 53/1*



*Mounting flange for seamless knives with magnet (special fabrication according to sample knife): Order-n° M/42/M*

*Mounting flange for seamless knives (Special fabrication according to sample) Order-n° M/42*



*The illustration shows an example of the grinding device.*

*Grinding device for counter knives: (special fabrication according to sample knives): Order-n° M/50*

*Diamond grinding wheel with flange 61/1: Order-n° 53/2*

## Grinding device for counter knives of the seamless knives

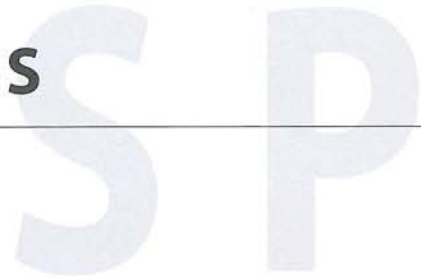
For the counter knives of the round seamless knives appropriate grinding devices are also available.

These grinding devices are assembled on the basis of the modular system and exactly adapted to the corresponding knives.

In this case, too, it is necessary to send sample knives together with an inquiry or order.

In general, these counter knives are made of hard metal. Therefore, a diamond grinding wheel is required for grinding.

# SPECIAL GRINDING DEVICES



*The perfect devices for the precise grinding of circular knives and round knives*

### Regrinding of circular knives from cloth cutting machines.

It is known that circular knives are ground on the grinding equipment integrated in the cloth cutting machines. However, through this way of grinding the initial shape of the knife (e.g. 4-arcs, 6-arcs, 8-arcs or 10-sided) is lost, in other words, the advantage which ought to be obtained by these multi-edge knives during the cloth cutting is also lost. Therefore, it is necessary to regrind the knives from time to time and to provide them with the initial shape.

This will be possible through our grinding device for circular knives.

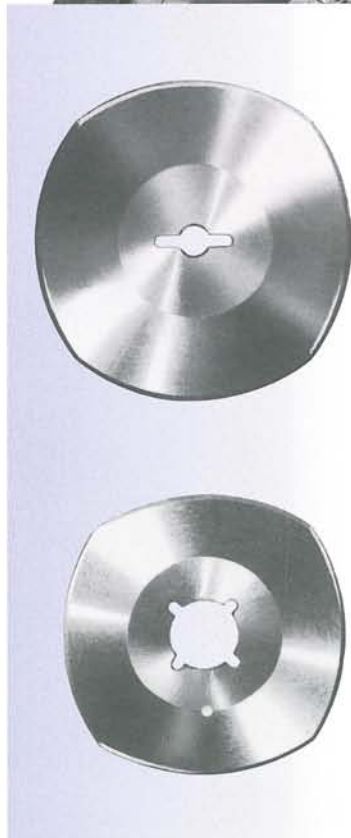
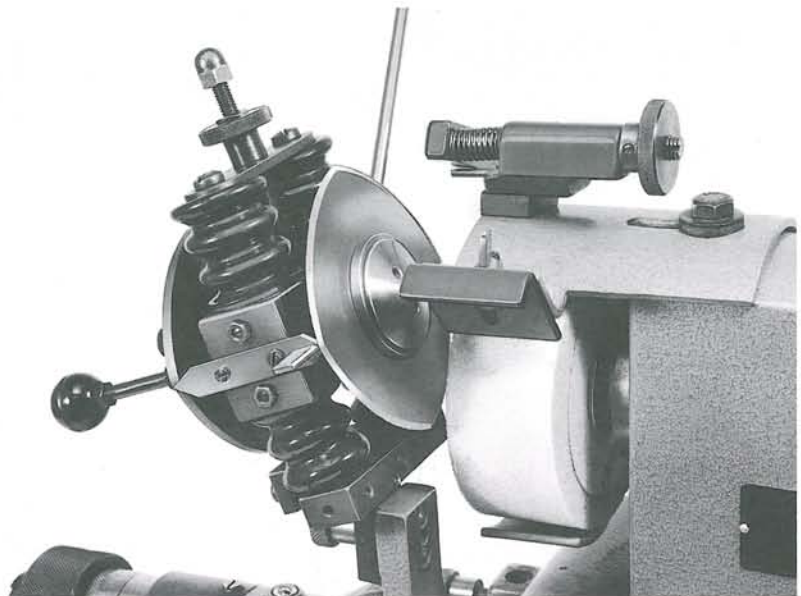
All knives from 70-130 mm dia. can be clamped in the basic model of the grinding device. Diameters from 130-200 mm require an extension of the clamping foot. Insertion rings are available for the various bores of the knives.

For grinding the different shapes, cam discs are used which produce, when rotating, the needed profile with the aid of a crank guide, by lifting and lowering the grinding device.

For the grinding we recommend the wide-edged cup grinding wheel with wide border.

**Order-n° 51/5.**

**When ordering, please state make, diameter and shape of the cloth cutting knives to be ground.**



*Basic model for knives up to 130 mm dia:  
Order-n° M/36-39*

*Cam discs for:  
4-arcs knife Kuris: Order-n° M/36  
4-ars knife Hoogs: Order-n° M/52  
6-arcs knife: Order-n° M/37  
7-arcs knife: Order-n° M/51  
8-arcs knife: Order-n° M/38  
10-sided knife: Order-n° M/39*

*The grinding device is suitable for models 68/1 and 82-100.*

*Foot extension for knives 130 up to 200 mm  
Diameter: Order-n° M/53*

*for model 68/1*



*For phototechnical reasons some pictures are taken without the required protective guard in place. The operation of our grinding machines is not permitted without*

# ESPECIALS

*The illustrations show some examples of the different fields of application*

*Round knife  
200 mm dia. from  
the textile industry,  
bevel 18°*



**Grinding device with motor drive for round knives**

For regrinding of round knives of all types up to 200 mm dia. In the grinding device with motor drive the knife will be turned slowly (approx. 60 rpm) and constantly against the direction of rotation of the grinding wheel. This results in a very fine cutting edge and an absolutely concentric running. An exact grinding is ensured by the sensitive feeding at the support (one vernier graduation mark = 0,02 feed).

When paying attention to the vernier graduation also knives with two bevels may be accurately centric-ground. Several round knives can be ground to the same diameter when, during the grinding, the vernier at the support is observed.

*The round knife grinding device is available in several versions.*

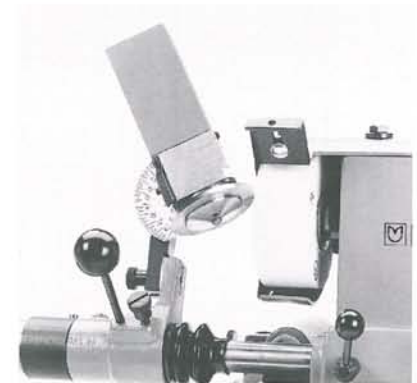
*up to 130 mm diameter: Order-n° M/41-130*

*up to 200 mm diameter: Order-n° M/41-200*

*Current potential: alternating current 230 V, 50 Hz.*



*Crush cutter for strip cutting machines  
e.g. Mauser, Senfix. Order-n° M/60*



*Strip cutting knife Steinhauser  
Order-N° M/62*

## **Grinding device for round knives**

Grinding device for round knives up to 130 mm diameter, e.g. from the textile industry. Grinding angle adjustable.

When ordering, please state diameter, bore and cutting angle or send us sample knives.

**Order-n° M/34**

*The grinding device is suitable for models 68/1 and 82-100.*

## **Accessories:**

*Mounting flange. The mounting flange will be specially produced for the knife concerned in order to ensure an absolute concentric running accuracy. Therefore, a sample knife is needed together with the inquiry/order.*

## **Mounting flange:**

- up to 130 mm dia.: Order-n° M/61-130
- up to 200 mm dia.: Order-n° M/61-200
- Diamond truing device for the cup grinding wheel: Order-n° M/2
- Borazon grinding wheel for HSS-steels: Order-n° 53/1

*The grinding device is suitable for model 68/1*

# CIRCULAR KNIFE GRINDING

## MACHINES

### KMS 300

### KMS 400



#### KMS 300

For regrinding of: circular knives from 150 - 300 mm diameter and seamless knives from 127 - 279 (5"-11") diameter.

Net weight approx. 63 kg  
Gross weight approx. 74 kg



#### KMS 400

For regrinding of:  
Circular knives from 200-400 mm. diameter and seamless knives from 127-407 mm (5"-16") diameter.

Net weight: approx. 75 kg  
Gross weight: approx. 86 kg

#### Field of application of the knives:

- For trimming and cutting-off of hose-shaped knitwear, cut open, e.g. in stenter frames
- Cutting of fabric strips and ribbons, e.g. hemming of technical textiles
- Knitting of panty hoses, one-piece ladies' cardigans and dresses

#### Simple operation:

- The grinding angle is infinitely variable from 0-35°
- Adjustment is carried out by means of quick-set clamping devices so that the change-over to other cutting angles will be possible with a minimum of effort.
- There is a stop mounted for grinding of seamless knives.

#### Advice:

In addition, we recommend for grinding of counter-knives the model 90 with diamond cup grinding wheel 53/2 and flange 61/1.

#### Technical data:

Standard location hole of the knife shaft is 40 mm  
Two three-phase motors 230/400 V, 50/60 c/s  
Borazon grinding wheel, order no. 53/1  
Number of revolutions of the circular knives:  
12-14 rpm  
Number of revolutions of the grinding wheel:  
6200 rpm.  
Cutting speed approx. 32 m/sec.  
(permitting a cool grinding process)  
Accessories: dressing stone, key  
Special clamping systems on request.



Careful tool sharpening never was such an easy job!

# SHARPENING MACHINE

## Model 180

With the new MAIER sharpening machine, model 180, exact and careful tool sharpening will be even easier. The machine is provided with a porous Japanese water stone, hardly subject to glazing, and achieving surfaces of top quality. Water cooling and surface grinding contribute to a maximum edge life, and the horizontally rotating wheel enables best visibility.

Since heat will not be generated, the tool can be guided close to the cutting edge in order to control the sharpening process in the best possible way. There is no danger through sparking, and that is the reason why the machine can also be used without any risks in workshops handling timber and in apprentice training shops.

- Surface grinding - that's why there is no weakening of the cutting edge
- Fine-grained Japanese stone ensures top quality of ground section
- Water cooling - avoids temper drawing during the grinding process
- Maximum life of cutting edges
- No sparking

*Technical data:*

*Sharpening wheel: Japanese water stone, granulation 1000, 180x70 mm dia., thickness 20 mm, on steel supports, centralized locking device, splash guard: Order n° 180/1*

*Motor: 220 V, 125 W, 50/60 c/s, 450 rpm*

*Casing: Plastics, tool support adjustable in height and inclination, water reservoir with valve, waste pipe. Total weight approx. 5,5 kg.*



*Kitchen knives, butcher's knives, outdoor knives*



*Firmer chisel, plane iron, also for surface grinding of mirror*



*Turning chisel, axes and scullor's tools*



*Scissors and cutting tools of all types*

# ALTERNATIVE EQUIPMENT

## for model 68/1

*The flexible scissor grinding device for all types and sizes of scissors*

The scissors are tightly fixed and need not be disassembled.

The easily movable grinding arm guarantees secure grinding. Thus no displacement during grinding.

The cutting angle on the clamping device is adjustable from 0-60°.

The device can also subsequently be mounted. Two bores must be provided for fixing the grinding arm.

The grinding wheel guard will be fixed instead of the standard one supplied. Grinding is performed by means of a cup grinding wheel.

The burr caused through grinding will be removed by means of the dressing stone/oil stone supplied.

Scissor grinding device:

**Order-n° M/68.100**

Dressing stone/oil stone: **Order-n° V41**

Cup grinding wheel: **Order n° 51/7**

*For phototechnical reasons some pictures are taken without the required protective guard in place. The operation of our grinding machines is not permitted without these guards being in place.*



### Work support

For the right-hand grinding station. As a support for various free-hand grinding and polishing operations. The work support's angle may be adjusted so that it can also be used for chamfer grinding or e.g. for grinding of scissors.

**Order-n°M/27**

### Eye shield

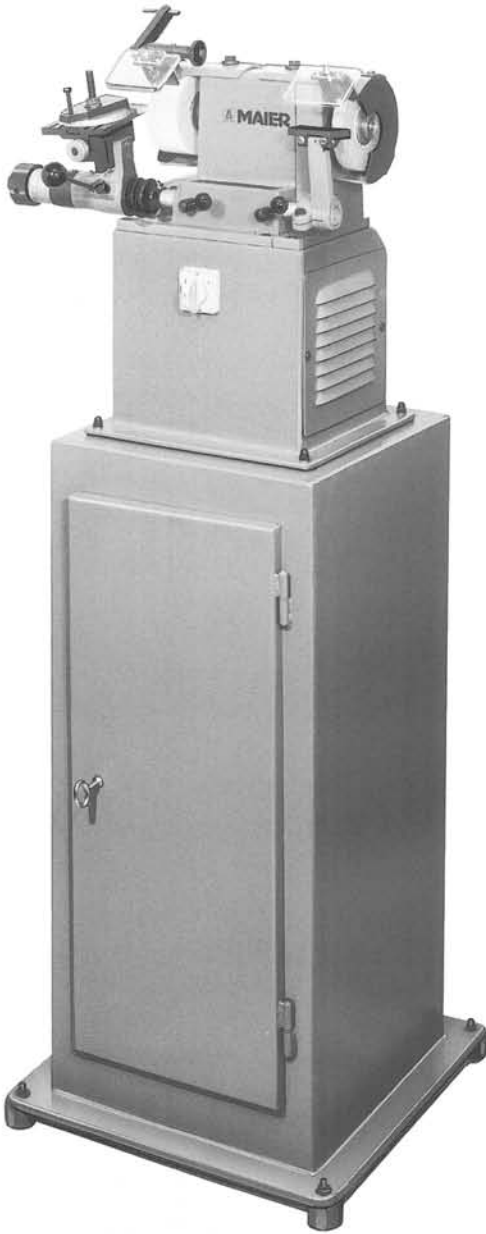
Free visibility to the workpiece, does not impede the operator but is a perfect protection against eye injuries. Eye glass with curved shield and adjustable holding arm, which can be attached to the left or right-hand grinding station. Fixing instead of screws of left-hand or right-hand grinding wheel guard.

**Order-n° M/49**



# ESPECIALS

*Perfect precision and finest grinding technique for individual fields of application*



**Large steel base**

For mounting table machine model 68/1. With storage compartments for knife holders, grinding devices and grinding wheels.

Thus the machine can be installed without needing a table or work bench.

**Order-n° M/3**

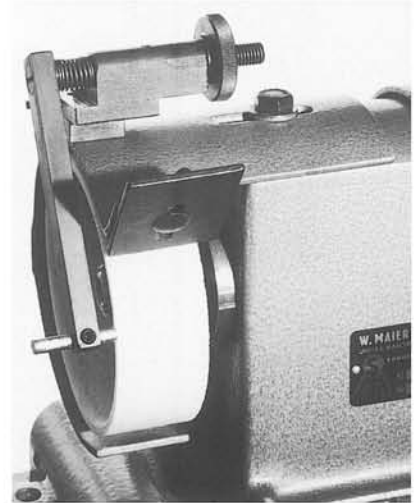
**Diamond dressing device**

For the truing of the cup grinding wheel at the left-hand grinding station.

Advantage of dressing the grinding wheel with a diamond: There will be a considerably finer finish. The grinding wheel runs perfectly true. The cup wheel allows exact angular inward dressing.

Especially recommended for precise grinding operations or delicate cutting edges such as buttonhole knives.

**Order-n° M/2**



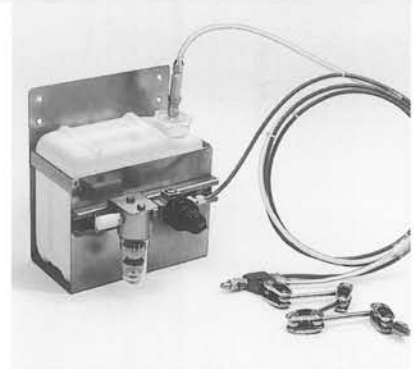
**Spray cooling attachment**

When sharpening delicate cutting edges, e.g. lining trimmers (shoe trimming knives), buttonhole knives, cloth cutting knives etc. Cooling is performed by cooling emulsion very finely atomized by compressed air.

Strength and intensity of the cooling mist as well as the exact area to be cooled can be adjusted by means of a nozzle.

No drip pan is required since the coolant is completely atomized and dissipated. The spray cooling attachment is supplied with a pressure reducer and manometer that allow connection to an existing compressed air supply including cooling tank.

**Order-n° M/4**



Emulsion oil for spray cooling attachment

**Order-n° M/4/1**

# OTHER PRODUCTS FROM THE MAIER MANUFACTURING PROGRAM



**Für die verschiedenen  
Schleif- und Polierarbeiten  
halten wir immer das richtige  
Schleifmittel für Sie bereit:**

- \* Topfschleifscheiben
- \* Diamantschleifscheiben
- \* Borazonschleifscheiben
- \* flache Schleifscheiben
- \* Tellerschleifscheiben
- \* Trennschleifscheiben
- \* Filzscheiben
- \* Abziehscheiben
- \* Stahldrahtbürsten
- \* Messingbürsten
- \* Fibrebürsten
- \* Polierpaste
- \* Abziehstein
- \* Ölstein

**Für weitere technische Daten  
wie Durchmesser, Härte, Körnung  
und das Einsatzgebiet der unter-  
schiedlichen Schleifscheiben  
wenden Sie sich bitte an Ihren  
Händler oder direkt an unsere  
Service-Abteilung.**

## **Blind Stitch Sewing Machines**

MAIER-blind stitch sewing machines are day by day proving to be a good investment in the clothing industry, in tailor's shops and alteration departments. Their reliability and quality are known in all parts of the world.

MAIER-blind stitch sewing machines sew the »invisible hem« even under difficult conditions. The easy manipulation and long durability are the outstanding features of these machines.

## **Sewing Machine Spare Parts and Cloth Cutting Knives:**

As far as the production of sewing machine spare parts is concerned, we are specialized in producing knives, loopers and needle plates. A broad range of cloth cutting knives completes our program. We sell these sewing machine spare parts and knives with great success to all parts of the world. A high precision and an excellent quality guarantee their perfect function in the sewing and cloth cutting machine. Therefore, we are also an esteemed partner in our capacity as sub-supplier for the sewing machine manufacturers.

## **Machine Knives, Precision Parts and Structural Components:**

We take the measurements for the specific requirements of your production. Specially produced parts according to sample or drawing are used for precision works in machines for cable insulating, wood working, plastic recycling, food processing, textile machinery and the production of special machines. Are you looking for a manufacturer producing small, complicated and sharp parts?

Then you have really found the right company.

## **Scalloping Machines:**

Scalloping is interesting and attractive. Scalloping is used for elegant household linen, table cloths, napkins or pillows. Also collars of ladies blouses are decorated by means of the high-quality scallop seam consisting of three threads.

## **Special Machines:**

We are committed to build precision. No matter whether these are sewing machines, packing machines or engraving machines. The optimum solution for drawing offices and engineers. We build and sell them.

## **Skirt Marker:**

It is the ideal partner for boutiques, department stores, and alteration departments. Our »fadomat« marks clearly and exactly by means of thread loops - without any chalk. The hem line can be ironed at once. The thread loops can be removed easily. A clean and efficient marking without chalk dust.





# MAIER



MAIER-UNITAS GMBH

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