

Operating Instructions

USK 160 S

Universal Wet-Grinding Machine



Incl. USK 160 S floor-mounted version



Operating Instructions

Universal Wet-Grinding Machine USK 160 S

Manufacturer

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Documents for the machine operator

Operating instructions

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1. Important notes

1.1 Preface to the operating instructions

These operating instructions are designed to make it easier for users to familiarize themselves with the universal wet-grinding machine, also referred to in the following as “the grinding machine” and use it for its intended purpose.

The operating instructions contain important information on how to operate the grinding machine safely, properly and cost-effectively. Observance of these instructions helps avoid hazards, reduce repair costs and downtimes, and increase the reliability and service life of the grinding machine.

The operating instructions must always be accessible at the place of use of the grinding machine.

The operating instructions must be read and used by all persons entrusted with working on the grinding machine, e.g. those entrusted with:

- Transport, installation, commissioning
- Operation, including troubleshooting in the process flow, as well as
- Upkeep (maintenance, repair).

In addition to the operating instructions and the binding accident prevention regulations applicable in the country and place in which the machine is used, generally acknowledged technological rules with regard to safe and professional work practices are to be observed.

1.2 Warnings and symbols in the operating instructions

It is essential to observe the following symbols/designations used in the operating instructions.



The hazard triangle with the signal word “CAUTION” is used as a work safety indication for all work which might result in death or physical injury.

Special care and caution must be taken when carrying out such work.



“ATTENTION” is used to draw attention to particular points in order to avoid damage and/or destruction of the grinding machine and its environment.



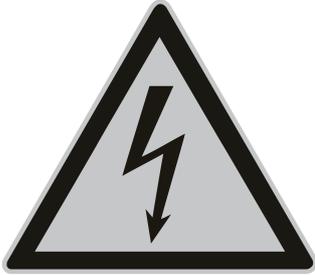
“NOTICE” refers to user tips and especially useful information.

1. Important notes

1.3 Warning signs and what they mean

1.3.1 Warning and prohibition signs on/in the grinding machine

The following warning and prohibition signs have been affixed to the grinding machine:



CAUTION! DANGEROUS ELECTRICAL VOLTAGE (warning notice on the rear panel)

When connected to the voltage supply (3x 400 V), the grinding machine becomes electrically live and touching its live parts directly can be life-threatening.

Live machine parts may be opened only by authorized, trained personnel.

The grinding machine must be disconnected from the mains supply before carrying out servicing, maintenance and repair work on it.



CAUTION! RISK OF INJURY FROM ABRASIVE PARTICLES (mandatory sign on the front plate)

Grinding, polishing and dressing gives rise to abrasive particles which can enter the eyes.

Wearing safety glasses is mandatory when carrying out such jobs.

1.3.2 General mandatory signs

The following general mandatory signs must be observed:



CAUTION! RISK OF INJURY FROM KNIFE

Work on the grinding machine involves grinding knives which could cause serious cut injuries due to the sharp blades.

Wearing protective gloves is mandatory when carrying out such jobs.

Be careful when transporting blades! Use the protective devices provided by the knife manufacturer. Wear protective gloves and apron.

1. Important notes

1.4 Rating plate and serial number



Figure 1-1 Rating plate

The rating plate is located on the rear panel of the machine.



Figure 1-2 Serial number

The machine serial number can be found on the rating plate and on the rear left side wall (see arrow).

1.5 Figure and item numbers in the operating instructions

If the text refers to a machine component shown in a figure, a figure or item number is added in brackets after the machine component.

Example: (7-9/1) denotes figure number 7-9, item 1.



Figure 7-9 Grinding notches

Hold the cutlery knife (7-9/1) to the serration grinding wheel (7-9/2) at a steep angle (approx. 45°).

Then slowly rotate towards the knife tip.

2. Safety

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 this grinding machine is familiarity with the basic safety instructions and regulations.

- These operating instructions contain important notes on how to operate the grinding machine safely.
- These operating instructions, in particular the safety notes, must be read by all those who work at the grinding machine.
- 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 grinding machine, who

- are familiar with the occupational safety and accident prevention regulations and have been received instruction in handling the grinding machine,
- have read and understood the operating instructions, in particular the section entitled "Safety" and the warning notes, and have provided signed confirmation of this.

Checks are also carried out at regular intervals to ensure that the personnel are fulfilling their obligation to observe safety at work.

2.1.3 Obligation on the part of the personnel

All personnel working on the grinding machine undertake to

- observe basic occupational safety and accident prevention regulations,
- read the operating instructions, particularly the section entitled "Safety" and the warning notes, and provide signed confirmation of this.

2.1.4 Hazards involved in handling the grinding machine

The grinding machine has been built to the latest technological standards and the established rules of technical safety. In spite of this, its use poses inherent risks which could result in bodily harm or even death of the user or third parties, or impairment of the grinding machine or other property.

The grinding machine may only be used:

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

2. Safety

Faults that might impair safety must be eliminated immediately.

2.1.5 Malfunction

If any safety-relevant malfunction occurs in the grinding machine or if the processing response indicates that such malfunction may have occurred, the grinding machine must be stopped immediately until such time as the malfunction has been detected and eliminated.

Malfunctions may only be eliminated by authorized specialists.

2.2 Intended use

The grinding machine is meant for grinding and polishing linear and sickle-shaped flat knives only.

Other than hand knives (e.g. carving knives), all the knives must be clamped to suitable grinding plates.

Before starting work on a flat knife, a check must first be carried out as to whether the knife fits onto the grinding plate. Only then may the knife be clamped onto the grinding plate.

Any other use is considered improper use. KNECHT Maschinenbau GmbH assumes no liability for damages resulting from improper use. The user alone bears the risk in such cases.

Use as intended includes the observance of all the instructions in the operating instructions.

The grinding machine is being used improperly if, for example:

- flat knives are ground without using the grinding plate.
- attachments are not properly mounted.
- knives are sharpened/polished in opposite direction of the cutting edge on the wet-grinding belt, finned grinding wheel, wet-honing wheel, serration grinding wheel as well as the polishing disc.

2.3 Warranty and liability

Warranty and liability claims in case of personal injuries or property damage are excluded if such damage is attributable to one or more of the following causes:

- improper use of the grinding machine
- improper transportation, commissioning, operation and maintenance of the grinding machine
- operating the grinding machine with defective safety devices, or using improperly attached or malfunctioning safety and protective equipment
- failure to observe the instructions with regard to transportation, commissioning, operation, maintenance and repair of the grinding machine

2. Safety

- unauthorized structural alterations to the grinding machine
- unauthorized modification of such aspects as drive conditions (power and speed)
- insufficient monitoring of machine parts that are exposed to wear
- use of unapproved replacement and wear parts

Use only original replacement and wear parts. If parts are purchased from external suppliers, there is no guarantee that they are designed and manufactured to withstand the required level of stress and provide the required level of safety.

2.4 Safety regulations

2.4.1 Organizational measures

All available safety devices must be checked regularly.

Observe prescribed intervals for recurring maintenance work or as specified in the operating instructions.

2.4.2 Protective equipment

Before commissioning the grinding machine, care must be taken to ensure that all protective equipment is properly mounted and functional.

Protective equipment may be removed only after the machine has stopped and has been secured against accidental restarting of the grinding machine.

When spare parts are supplied, the protective equipment must be attached by the operator as stipulated.

2.4.3 Informal safety measures

The operating instructions must be permanently available at the place of use of the grinding machine. In addition to the operating instructions, the generally applicable as well as the locally relevant accident prevention regulations must also be made available and observed.

All safety alert symbols and danger warnings on the grinding machine must be complete and clearly legible.

2.4.4 Selection and qualification of personnel

Only trained and instructed personnel may work on the grinding machine. The minimum legal age for employment must be observed.

2. Safety

The responsibilities of the personnel must be clearly assigned, i.e. commissioning, operation, maintenance and repair, etc.

Personnel still undergoing training or instruction may only work on the grinding machine under the permanent supervision of an experienced person!

2.4.5 Machine control system

Only trained and instructed personnel are allowed to switch on the machine.

2.4.6 Safety measures in normal operation

Refrain from any method of working which may pose a risk to safety. Only operate the grinding machine if all the safety devices are installed and fully functional.

Check the grinding machine for external signs of damage and correct operation of the safety devices at least once every shift.

Report any changes (including operating behavior) immediately to the department/person in charge. Where required, shut down the grinding machine immediately and secure against restarting.

Before switching on the grinding machine, ensure that no one is exposed to any risk from the start-up of the machine.

If there are any functional faults, stop the machine immediately and secure against restarting. Have the faults eliminated immediately.

2.4.7 Hazards due to electrical power sources

Work on electrical units or operating materials may only be performed by a qualified electrician in accordance with electrical rules.

Defects, such as damaged cables, cable connections, etc. must immediately be rectified by an authorized electrician.

2.4.8 Particular hazard zones

In the area of the wet-grinding belt, finned grinding wheel, serration grinding wheel, polishing disc and wet-honing wheel, there is a risk that clothing, fingers, and hair, for example, may be pulled in and crushed. Suitable personal protective equipment must be worn.

2.4.9 Servicing (maintenance, repair) and fault elimination

Maintenance work is to be carried out on schedule by trained personnel. Inform operating personnel before starting repair work. A responsible supervisor must be appointed.

2. Safety

For all service work, the grinding machine is to be disconnected from the power supply and secured against accidental restarting. Pull out the mains plug. Cordon off the servicing area as far as possible.

After completion of the maintenance work and fault rectification, install all the safety devices and check whether they are fully functional.

2.4.10 Structural modifications to the grinding machine

Modifications, retrofitting or rebuilds of the grinding machine are not allowed without the permission of the manufacturer. This also applies to the installation and adjustment of safety devices.

No alterations may be carried out without the prior written approval of KNECHT Maschinenbau GmbH.

Immediately replace machine parts which are not in perfect condition.

Only use original replacement and wear parts. If parts are purchased from external suppliers, there is no guarantee that they are designed and manufactured to withstand the required level of stress and provide the required level of safety.

2.4.11 Cleaning the machine

Cleaning agents and materials used must be handled properly and disposed of in an environment-friendly manner.

Ensure that wear and replacement parts are disposed of in a safe and environmentally friendly way.

2.4.12 Oils and greases

When handling lubricants/oils and greases, follow the safety regulations for the product. Observe special instructions for the foodstuffs sector.

2.4.13 Relocation of the grinding machine

Even when moving the machine a short distance from its site, disconnect it from all external power supply sources. Before restarting the machine, connect it properly to the current supply.

When loading or unloading, only use hoisting and load lifting equipment with sufficient load-bearing capacity. Appoint a qualified banksman (signaler) for the lifting process.

No persons other than those entrusted with this work may be present in the loading and installation area.

Only lift the grinding machine correctly with hoisting gear in accordance with the operating instructions (attachment points for hoisting equipment, etc.). Only use suitable transport vehicles with sufficient load-bearing capacity. Attach the load securely. Use suitable attachment points. When putting in operation again, proceed only as instructed in the operating instructions.

3. Description

3.1 Intended use

Using the USK 160 S universal wet-grinding machine, you can grind, deburr and polish hand and cutter knives as well as profile cutlery knives.

3.2 Technical specifications

3.2.1 General

Power supply*	3x 400 V
Mains frequency*	50 Hz
Output*	0.7 kW
Power consumption*	0.8 kW
Energy consumption*	2 A
Back-up fuse	16 A
Idle noise level of the wet-grinding belt	80 dB (A)
Diameter polishing disc	150 mm
Operating noise level of the polishing disc	84 dB (A)
Diameter serration grinding wheel	150 mm
Operating noise level of the serration grinding wheel	86 dB (A)
Speed	1750 1/min

*) This information may change depending on the electrical power supply.

A DELTA cutter knife from KNECHT Maschinenbau GmbH was ground.

3. Description

3.2.2 USK 160 S (tabletop version)

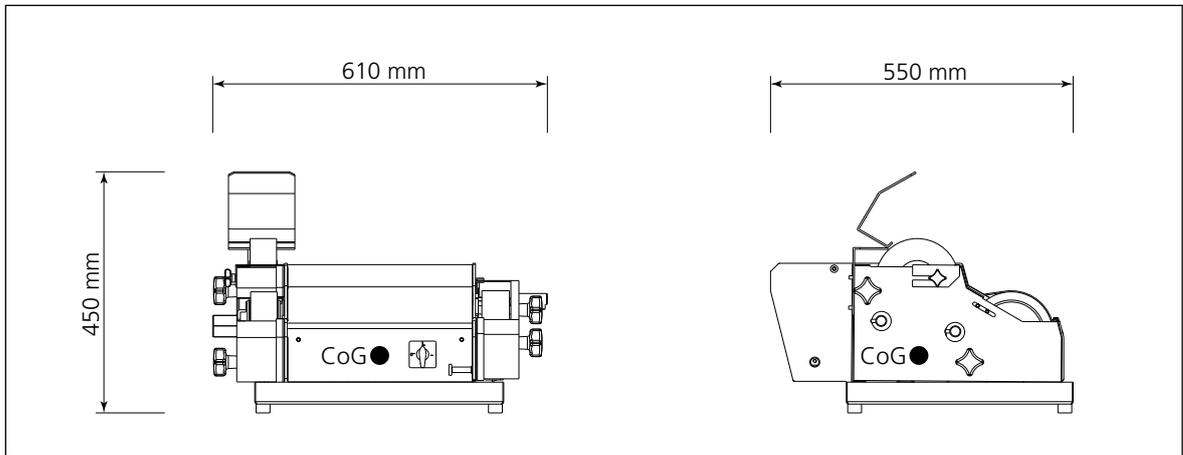


Figure 3-1 Dimensions in mm (tabletop version)

Height _____ 450 mm

Width _____ 610 mm

Depth _____ 550 mm

Weight _____ 29 kg

3. Description

3.2.3 USK 160 S (floor-mounted version)

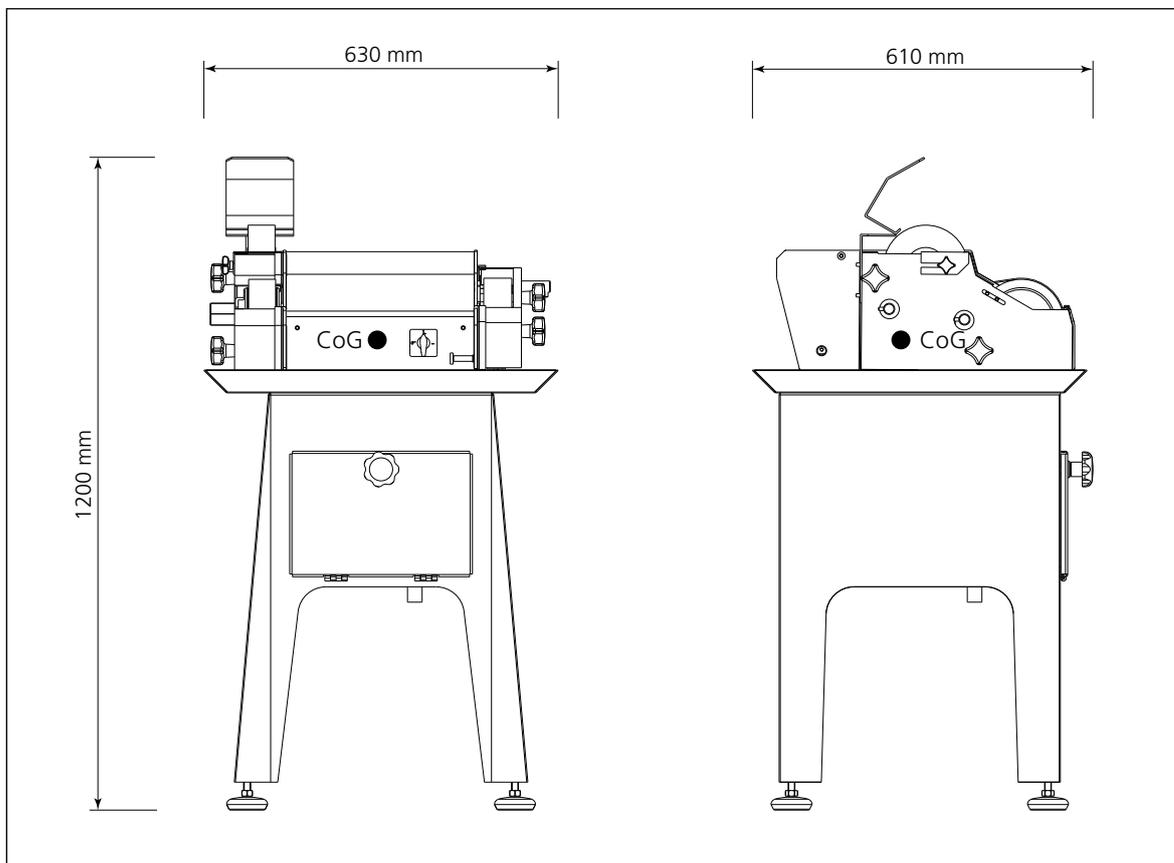


Figure 3-2 Dimensions in mm (floor-mounted version)

Height _____ 1200 mm

Width _____ 630 mm

Depth _____ 610 mm

Weight _____ approx. 66 kg

3. Description

3.3 Functional description

The machine is equipped with a wet-grinding belt, a finned grinding wheel and a wet-honing wheel. The USK 160 S can be alternately equipped with a serration grinding wheel for cutlery knives and a polishing disc.

In just a few simple steps, you can mount a device (HV 161) that sharpens cutter knives up to 120 ltr. at the correct angle (accessory).

The USK 160 S is available in a tabletop and floor-mounted version.

3. Description

3.4 Description of modules

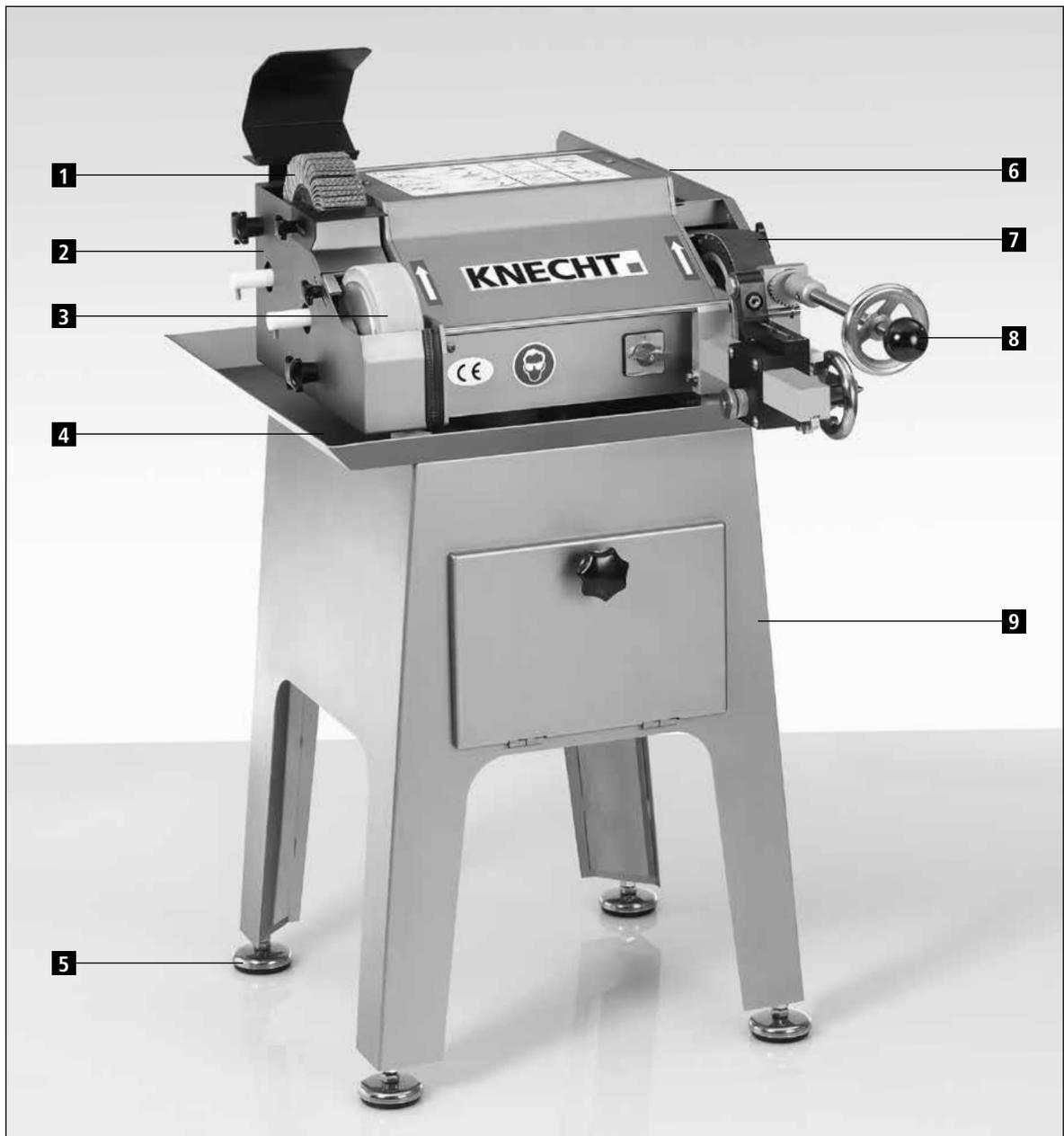
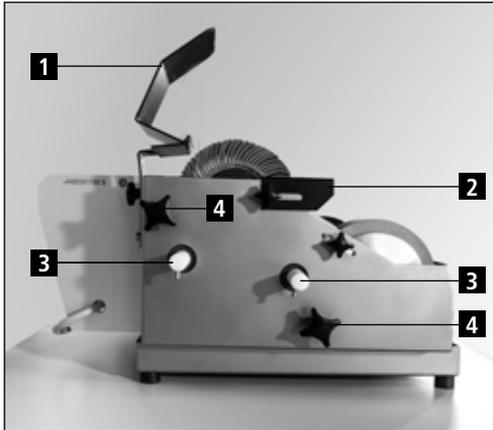


Figure 3-3 General view of grinding machine (USK 160 S floor-mounted version | HV 161)

- | | | | |
|---|-----------------------|---|--|
| 1 | Finned grinding wheel | 8 | HV 161 belt grinding attachment (optional) |
| 2 | Protection hood left | 9 | Base with compartment for accessories (floor-mounted version only) |
| 3 | Wet-honing wheel | | |
| 4 | Water tray | | |
| 5 | Machine feet | | |
| 6 | Protection hood right | | |
| 7 | Wet-grinding belt | | |

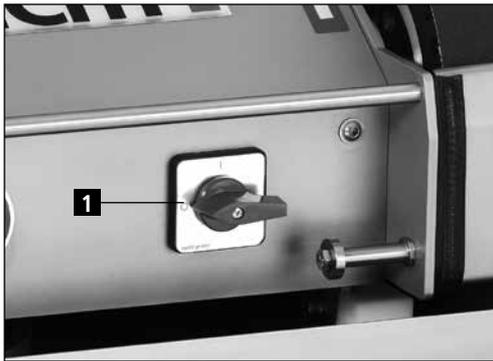
3. Description



- 1 Spray guard
- 2 Slide guard
- 3 Water nozzles left
- 4 "Protection hood" star handles

Figure 3-4 Side view (left) of grinding machine (USK 160 S tabletop version)

3.4.1 Control panel

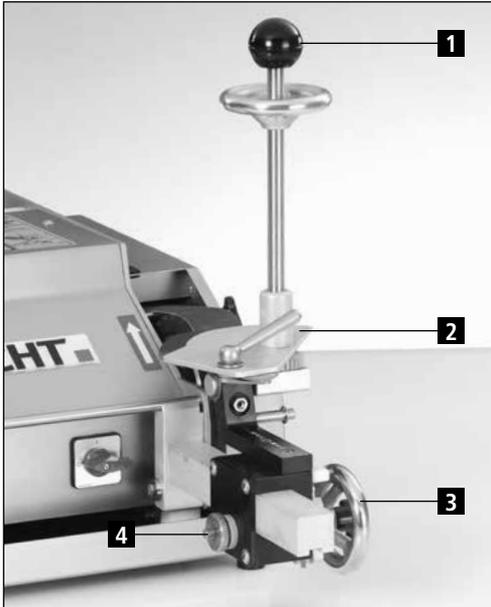


- 1 "I/O" main switch

Figure 3-5 Control panel

3. Description

3.4.2 HV 161 belt grinding attachment (optional, all versions)



- 1 Grinding lever
- 2 Grinding plate
- 3 Hand wheel for feeding the belt grinding attachment
- 4 Spacer disc bracket

Figure 3-6 HV 161 belt grinding attachment

4. Transport



For transporting the machine, the locally applicable safety and accident prevention regulations must be observed.

Only transport the machine in the upright position (with the machine feet facing downwards).

4.1 Transport aids

For transporting and for setting up the grinding machine, only use adequately dimensioned means of transport aids, e.g. truck, forklift or hydraulic lifting truck.

When using a forklift or a lift truck, move the fork under the grinding machine.

Bear in mind the center of gravity of the machine. The center of gravity (CoG) is shown in figure 3-1 and 3-2.

4.2 Transport damage

If damage is detected on unloading after acceptance of the delivery, inform KNECHT Maschinenbau GmbH and the freight forwarder immediately. If required, consult an independent expert immediately.

Remove the packaging and shipping straps. Remove the shipping straps on the grinding machine. Dispose of the packaging in an environment-friendly way.

4.3 Transport to another installation site

For transport to another installation site, ensure that space requirements are fulfilled (see Chapter 3.2).

A reliable electrical connection must be provided at the new installation site. The grinding machine must be stable and firmly placed.



Installations on the electrical system may only be performed by an authorized specialist. Observe the locally applicable safety and accident prevention regulations.

5. Installation

5.1 Selection of qualified personnel



We recommend having the grinding machine installed by trained KNECHT personnel.

We assume no liability for damage caused by improper installation.

5.2 Installation site

When determining the installation site, bear in mind the space required for installation, maintenance and repair work on the grinding machine (see Chapter 3.2).

5.3 Supply connections

The grinding machine is delivered ready for connection with the appropriate connection cable.



Make sure the machine is correctly connected to the power supply.

5.4 Settings

The various components and the electrical system are adjusted by KNECHT Maschinenbau GmbH prior to delivery.

ATTENTION

Unauthorized changes to set values are not permitted and may damage the grinding machine.

5. Installation

5.5 Using the grinding machine for the first time

Place the grinding machine at the installation site on a level table or base.

Compensate for any unevenness in the floor using the adjustable machine feet by unscrewing them counterclockwise. The machine is aligned using a level (floor-mounted version only).

Have a qualified electrician on site install the current supply.

Completely install and check the safety devices before commissioning.



Be sure to have all the safety devices checked by trained personnel before commissioning.

6. Commissioning



All work on the machine may only be performed by trained personnel.

The locally applicable safety and accident prevention regulations must be observed.

There is a risk that hands, hair, and clothing may be pulled in while the grinding machine is switched on.

This can result in serious injury. Personal protective equipment must be worn.



Figure 6-1

Fill water tank (6-1/1) with approx. 9 liters of water.

Connect the power plug (CEE plug) to the power socket provided on site (3x 400V, 16 A).

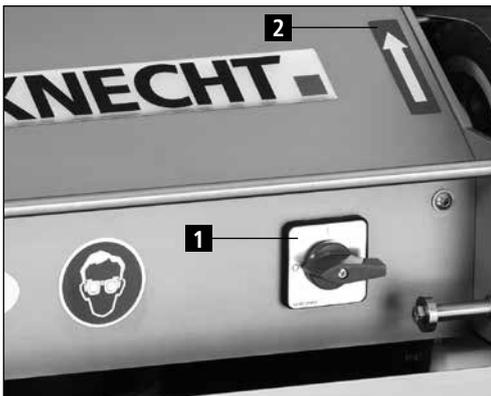


Figure 6-2

Set the main switch (6-2/1) to "I". The wet-grinding belt, polishing disc/wet-honing wheel and finned grinding wheel/serration grinding wheel rotate.

Check the direction of rotation. The direction arrow (6-2/2) indicates the rotation direction the wet-grinding belt and polishing disc/wet-honing wheel and finned grinding wheel/serration grinding wheel.

If the rotation directions are incorrect, have the phase reversed by a qualified electrician.

The feed quantity of coolant is regulated by turning the water nozzle (6-1/2).

After verifying the correct rotation direction, turn the main switch (6-2/1) to the "0" position.

7. Operation

7.1 General principles of grinding technology

If a blade has become blunt, material must be removed from its surface to restore it to its original sharpness.

For that, the knife in question is ground to produce its cutting edge. If, in the process, a burr appears on the blade, then the grinding process was successful and can be concluded. Now, before the final sharpness is achieved, the burr must be removed in a further step. This is done with a polishing disc.

As it is not only the sharp cutting edges but also the long service lives that define a blade, the cutting angle is another important indicator of a blade's performance. The smaller the cutting edge angle, the higher is the theoretical service life. In practice, however, the cutting edge breaks off and is therefore no longer sharp when the cutting edge angle is too small.

The cutting edge angles must therefore lie between 15° and 35°. If the cutting edge angles are less than 15°, the blade becomes so unstable that it breaks at the slightest resistance. If the cutting edge angle is greater than 35°, the blade is extremely stable, but service life will not be as long.

One more criterion for judging the properties of a cutting edge is the cutting edge profile.

There are three different ground profiles:



Tapered grinding



Convex grinding



Concave grinding

Convex ground profiles can mostly be found on cutter blades and hand knives. Tapered and concave ground profiles are predominantly found on circular knives and blades.

In general: Adhering to the profiles and the cutting edge angles specified by the manufacturer is required

7. Operation

7.2 Switching on the grinding machine

Set the main switch (3-5/1) from "0" to "1".

The wet-grinding belt, polishing disc/wet-honing wheel and finned grinding wheel/serration grinding wheel rotate.

7.3 Grinding sickle-shaped cutter knives on the wet-grinding belt

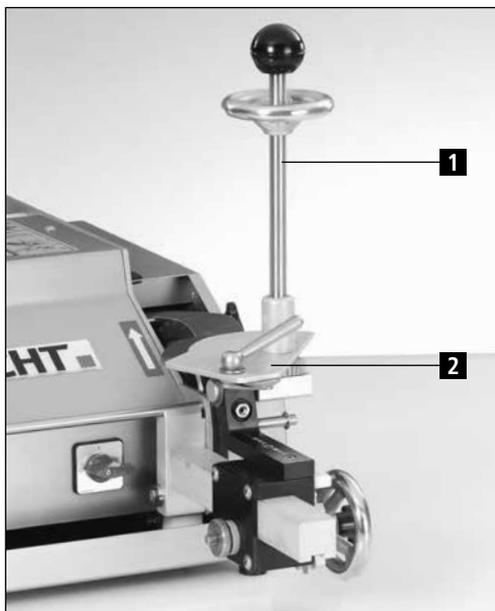


Figure 7-1 HV 161 belt grinding attachment

To grind sickle-shaped cutter knives, install the optional HV 161 (7-1/1) belt grinding attachment on the machine; the grinding plate (7-1/2) with knife is mounted to this device.

NOTICE

More information on this can be found in the technical documentation of the HV 161 belt grinding attachment.

7. Operation

7.4 Grinding hand knives on the wet-grinding belt



There is a risk that hands, hair, and clothing may be pulled in while the grinding machine is switched on.

Never hold the cutting edge against the rotation direction of the wet-grinding belt. This can result in serious injuries.



Figure 7-2 Grinding hand knives

Lay the hand knife flat onto the wet-grinding belt.

The cutting edge should run an angle to the grinding belt, not perpendicular. Press the knife onto the grinding belt with your free hand. The stronger the pressure, the more convex the grind will be.

Pull both sides of the hand knife over the grinding belt alternately until a burr is created over the entire cutting edge length.

Then, deburr and polish the hand knife on the polishing disc as described in Chapter 7.5 and on the wet-honing wheel as described in Chapter 7.6.

Switch off the grinding machine after the grinding process is finished. To do so, turn the "I/O" main switch (3-5/1) to the "0" position.

7. Operation

7.5 Polishing and deburring with the polishing disc



There is a risk that hands, hair, and clothing may be pulled in while the grinding machine is switched on.

Never hold the cutting edge against the rotation direction of the polishing disc.

Polishing gives rise to grinding particles that could enter the eyes. Wear safety glasses. Wear a face mask.

This can result in serious injuries.

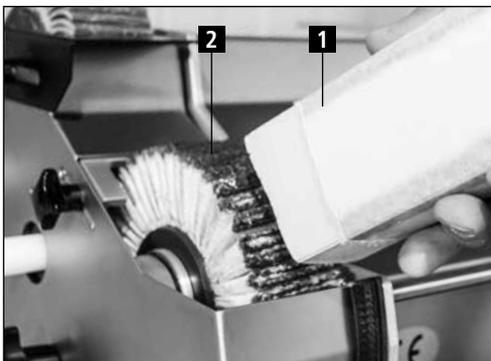


Figure 7-3 Applying the polishing paste

The burr on the knife is removed with the polishing disc; this gives the knife its final sharpness.

Set the main switch "I/O" (3-5/1) to "1".

Hold the polishing paste (7-3/1) briefly against the polishing disc (7-3/2).



Figure 7-4 Polishing hand knives

For polishing/deburring, move the knife (7-4/1) at a steep angle (approx. 20-25°) along the polishing disc (7-4/2).

Alternately polish the upper and lower side of the knife until the burr is removed.

Switch off the grinding machine after the polishing process is finished. To do so, switch the "I/O" main switch (3-5/1) to the "0" position.

7. Operation

7.6 Deburring the wet-honing wheel



There is a risk that hands, hair, and clothing may be pulled in while the grinding machine is switched on.

Never hold the cutting edge against the rotation direction of the wet-honing wheel.

Polishing gives rise to grinding particles that could enter the eyes. Wear safety glasses. Wear a face mask.

This can result in serious injuries.

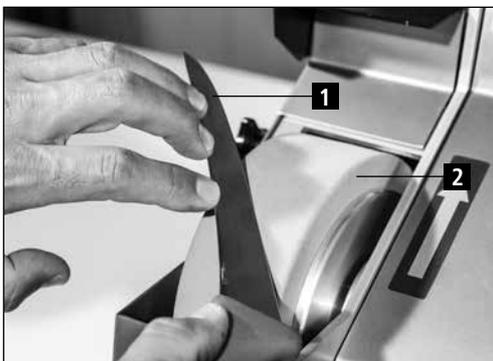


Figure 7-5 Deburring hand knives

Knives can also be deburred on the water-cooled wet-honing wheel.

The exact circumferential speed and optimal hardness of the wet-honing wheel result in a smooth blade that remains sharp for a long time.

Set the main switch "I/O" (3-5/1) to "1".

When deburring, move the knife (7-5/1) at a flat angle (approx. 15°) and apply strong pressure along the wet-honing wheel (7-5/2).

As soon as the burr is removed, continue grinding at a slightly steeper angle (approx. 17°) and without applying pressure.

Switch off the grinding machine after the deburring process is finished. To do so, switch the "I/O" main switch (3-5/1) to the "0" position.

7. Operation

7.7 Grinding cutlery knives on the serration grinding wheel



There is a risk that hands, hair, and clothing may be pulled in while the grinding machine is switched on.

Never hold the cutting edge against the rotation direction of the serration grinding wheel.

Polishing gives rise to grinding particles that could enter the eyes. Wear safety glasses. Wear a face mask.

This can result in serious injuries.

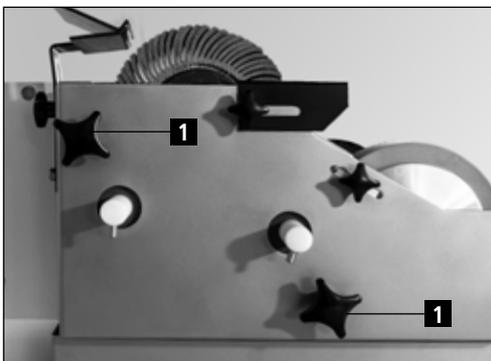


Figure 7-6 Removing the protection hood

The serration grinding wheel is mounted to grind cutlery knives, and the polishing disc is mounted to for dry polishing.

To do so, loosen the star handles (7-6/1) on the left side of the machine and remove the protection hood. Then dismount the finned grinding wheel and the wet-honing wheel.

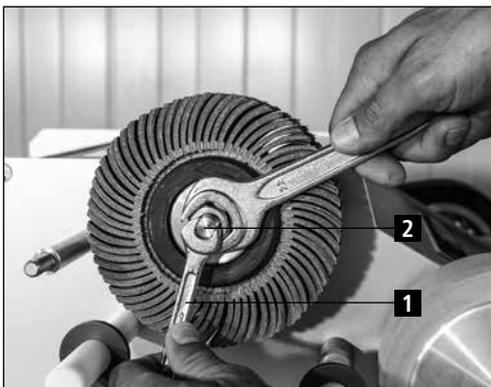


Figure 7-7 Loosening the finned grinding wheel

Use a spanner wrench (SW 22) (7-7/1) to loosen the nuts (7-7/2) of the grinding spindle.

Loosen = turn left (in the direction of rotation)
Tighten = turn right (against the direction of rotation)

The serration grinding wheel and polishing disc are installed in reverse order.

Set the main switch "I/O" (3-5/1) to "I".

NOTICE

If the grinding spindle turns with this, then counter it with a spanner wrench (SW 10) on the end of the shaft.

7. Operation



Figure 7-8 Pregrinding cutlery knives

In order to grind off the old serrated edge, first pregrind the cutlery knife (7-8/1) on a fine grinding belt (240 grain).

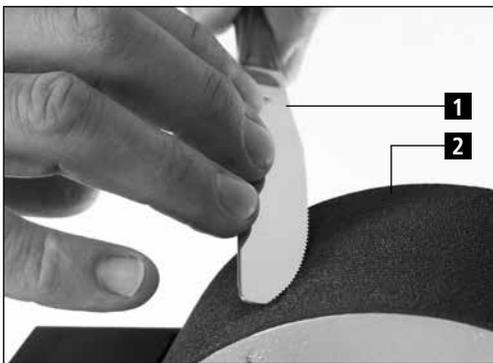


Figure 7-9 Grinding notches

Hold the cutlery knife (7-9/1) to the serration grinding wheel (7-9/2) at a steep angle (approx. 45°).

Then slowly rotate towards the knife tip.



Figure 7-10 Polishing cutlery knives

Then, deburr and polish the cutlery knife (7-10/1) on the polishing disc (7-10/2) as described in Chapter 7.5 or on the wet-honing wheel as described in Chapter 7.6.

ATTENTION

The water nozzle must be closed for dry polishing (see Chapter 7.10.2)

Switch off the grinding machine after the grinding process is finished. To do so, switch the "I/O" main switch (3-5/1) to the "0" position.

7. Operation

7.8 Changing the wet-grinding belt



For all work on the grinding machine, the locally applicable safety and accident prevention regulations as well as instructions in the “Safety” and “Important Notes” section of the operating instructions must be observed.

Never switch on the machine without the belt protection hood attached. Risk of injury!

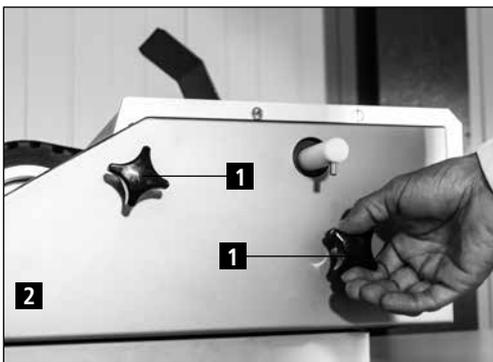


Figure 7-11 Removing the belt protection hood

Loosen and remove the star handles (7-11/1) by turning them in counter-clockwise direction; remove the belt protection hood (7-11/2).

Turn the belt relief lever (7-12/1) in the direction of the arrow up to limit stop.

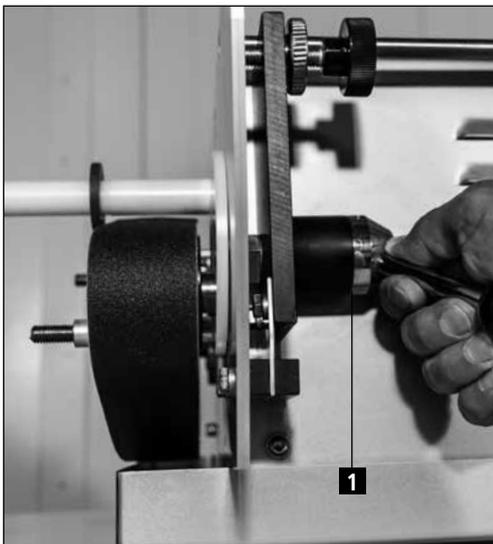


Figure 7-12 Changing the grinding belt

Remove the used grinding belt and place a new belt over the contact disc and guide pulley. Turn the belt relief lever (7-12/1) against the direction of the arrow up to limit stop. Turn the grinding belt by hand and check to see if it is not grinding anywhere.

Reattach the belt protection hood.

ATTENTION

Note the running direction arrows on the inside of the grinding belt.

7. Operation

7.9 Belt regulation



Figure 7-13 Belt adjustment

If the grinding belt is not running in the center of the contact disc, it can be aligned with the belt adjuster (7-13/1).

Turning the belt adjuster (7-13/1) counter-clockwise makes the grinding belt run to the left.

Turning the belt adjuster (7-13/1) clockwise makes the grinding belt run to the right.

7. Operation

7.10 Coolant unit

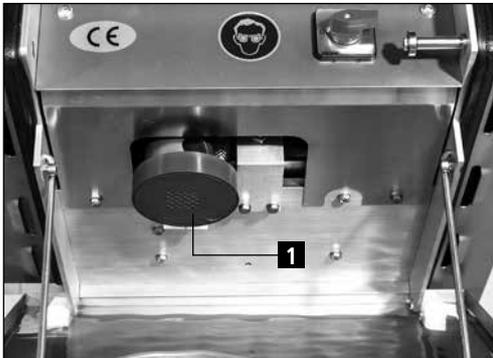


Figure 7-14 Submersible pump

In the USK 160 S, the coolant is supplied through continuous circulation around the grinding wheel using a submersible pump (7-14/1).

The abrasives are not immersed in water while the machine is idle. The grinding sludge is collected in the water tray.

The submersible pump is driven by the motor via a circular belt.

7.10.1 Belt cooling

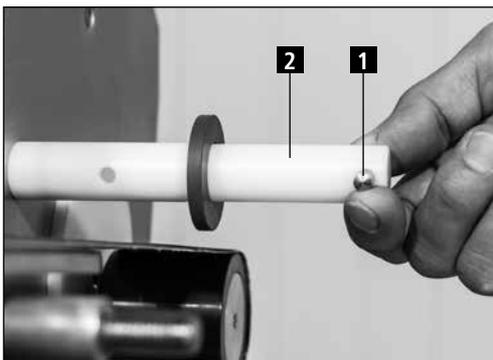


Figure 7-15 Adjusting the water nozzle

The submersible pump feeds the coolant through the water nozzle to the wet-grinding belt.

Coolant is apportioned by the swiveling of the water nozzle.

In doing so, the flow rate of the coolant does not change, rather the impact angle on the grinding belt.

The pin (7-15/1) on the water nozzle (7-15/2) indicates the angle at which the coolant will hit.

The standard setting is perpendicularly downwards.

Turning clockwise = more coolant
Turning counterclockwise = less coolant

For cleaning, the water nozzle is simply pulled out after removing the protection hood.

NOTICE

Opposed to the belt side, for which as much coolant should be applied to the wet-grinding belt, the finned grinding wheel or serration grinding wheel must receive more subtle doses.

7. Operation

7.10.2 Closing the water nozzle for dry grinding



Figure 7-16 Closing the water nozzle

When using a polishing disc to polish, the feed of water must be stopped.

To do so, push the rubber cap (7-16/2) over the hole (7-16/3) on the water nozzle (7-16/1).

8. Care and maintenance



For all work on the grinding machine, the locally applicable safety and accident prevention regulations as well as instructions in the “Safety” and “Important Notes” section of the operating instructions must be observed.

8.1 Cleaning

Clean the machine after each sharpening in order to prevent the grinding sludge from drying and making it harder to remove.

After cleaning the machine, lightly grease the hand knife grinding machine with non-corrosive oil (also refer to lubrication schedule). The coolant must be replaced on a weekly basis.

8.2 Lubrication schedule and lubricant table

Lubrication work	Turnus	OEST	SHELL	EXXON Mobil	DEA
Lubricating the threads of star handles and clamping levers	4 weeks	Multi-purpose grease L 2	Gadus S2 V100 2	Mobilith SHC 100	Dolon E2
Lubricate machine parts after cleaning	After each grinding	Paraffinum Perliquidum 16 L	Shell Risella 917	Marcol 82	Merkur pharmaceutical white oil 40

9. Malfunctions

9.1 Faults

Malfunction	Fault	Remedy
Wet-grinding belt stops under load	V-belt tension too weak	Tighten V-belt
	V-belt wheel and v-belt worn	Replace
Wet-grinding belt moves violently backwards and forwards or cannot be adjusted	Wet-grinding belt faulty	Replace wet-grinding belt
	Contact disc is damaged or worn out	Change the contact disc
	Guide pulley is worn out	Change the guide pulley
No coolant flow	Too little coolant in the water tray	Refill
	Lines are blocked	Clean
	Pump defective	Replace pump
Machine cannot be switched on	Power plug defective or not correctly inserted	Inspect power plug

If a fault is not included in the faults table or if the fault is not eliminated, please contact our service staff (Chapter 11).

10. Disassembly and disposal

10.1 Disassembly

All operating materials must be disposed of correctly.

Secure moving parts against slipping.

The disassembly must be carried out by a qualified specialist company.

10.2 Disposal

At the end of service life, the machine must be disposed of by a qualified specialist company. In exceptional cases and by agreement with KNECHT Maschinenbau GmbH, the machine can be returned.

Operating materials (e.g. grinding disks, wet-grinding belts, polishing discs, etc.) must also be disposed of correctly.

11. Service, spare parts and accessories

11.1 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

11.2 Service

Service management:

See postal address

service@knecht.eu

11.3 Spare parts

If you need spare parts, please use the spare parts list provided with the machine. Please place your order as shown below.

Please always include the following information:

(Example)

Machine type	(USK160S)
Machine number	(12530953160S)
Assembly designation	(base plate, USK160S)
Designation of individual part	(pump, USK160S)
Item no.	(9)
Drawing no.	(013E-01-0000)
Quantity	(1 pcs.)

Please feel free to contact us if you have any questions.

11. Service, spare parts and accessories

11.4 Accessories

11.4.1 Abrasives used, etc.

Name	Dimension	Grain	Order number	Note
Wet-grinding belt	960x50	40	412A-20-0521	
	960x50	60	412A-21-0516	
	960x50	80	412A-22-0517	
	960x50	100	412A-23-0518	
	960x50	120	412A-24-0519	installed on delivery
	960x50	240	412A-26-0520	
Wet-grinding belt, compact grain	960x50	180	412A-30-0180	
	960x50	320	412A-30-0320	
Polishing disc	d.150x40xd.15		412N-05-0150	
Wet-honing wheel	d.150x50xd.100		412K-01-0549	installed on delivery
Finned grinding wheel	d.150x50xd.15	100	412H-02-0554	
	d.150x50xd.15	280	412H-03-0624	installed on delivery
Serration grinding wheel, pitch 1.0	d.150x65xd.15		412G-01-0256	water-resistant
Pitch 1.25	d.150x65xd.15		412G-01-0498	water-resistant
Pitch 1.5	d.150x65xd.15		412G-02-0543	water-resistant
Pitch 2.0	d.150x65xd.15		412G-03-0542	water-resistant
Pitch 2.5	d.150x65xd.15		412G-03-0769	water-resistant
Pitch 3.0	d.150x65xd.15		412G-04-0541	water-resistant
Pitch 3.75	d.150x65xd.15		412G-04-0547	water-resistant
Pitch 4.0	d.150x65xd.15		412G-05-0644	water-resistant
Pitch 5.0	d.150x65xd.15		412G-06-0469	water-resistant
Pitch 6.5	d.150x65xd.15		412G-06-0560	water-resistant
Pitch 8.0	d.150x65xd.15		412G-08-0316	water-resistant

ATTENTION

Do not use any other abrasives without the approval of KNECHT Maschinenbau GmbH.

11. Service, spare parts and accessories

ATTENTION

The company KNECHT Maschinenbau GmbH is not liable in the event that other abrasives are used.

If you require grinding disks, wet-grinding belts, polishing discs, polishing pastes or other accessories, please contact our sales staff, partners, or KNECHT Maschinenbau GmbH directly.

Thank you for buying our product!

12. Appendix

12.1 EC Declaration of Conformity

in accordance with the EC Directive 2006/42/EC

- Machinery Directive 2006/42/EC
- Electromagnetic Compatibility Directive 2014/30/EC

We hereby declare that the machine mentioned below fulfills the basic health and safety requirements of the relevant EC Directive by virtue of the machine's construction and design and the version placed by us on the market.

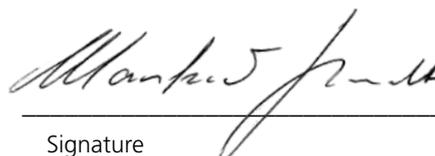
This declaration becomes void if the machine is modified in any way without our consent.

Designation of the machine:	Universal Wet-Grinding Machine
Type designation:	USK 160 S
Applicable harmonized standards, in particular:	DIN EN 12100-1 DIN EN 12100-2 DIN EN 60204-1 ISO 13857 DIN EN 349
Responsible for documentation:	Peter Heine (Dipl. Ing. Mechanical Engineering BA) Phone +49-7527-928-15
Manufacturer:	KNECHT Maschinenbau GmbH Witschwender Straße 26 88368 Bergatreute Germany

Complete technical documentation is available. The operating instructions document for the machine is available in its original version and in the native language of the user.

Bergatreute, October 18, 20149

Place, date


Signature

Managing Director

Signatory details

KNECHT Maschinenbau GmbH

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