

Drill Grinding Attachment for Twist Drills

Dear customer,

Please familiarize yourself with the proper usage of the device by reading and following each chapter of this manual, in the order presented. Keep these operating instructions in a safe place for future reference. The operating instructions contain important information on commissioning and handling. Enclose the instructions with the product when handing over to third-parties! Please also read all safety instructions! These should make the correct use easier and help you to prevent misunderstandings and damage.



SAFETY NOTES

To avoid malfunctions, damage and health impairments, please observe the following notes:

- Persons with restricted physical, sensory, or mental capabilities may not use the device unless they are supervised by a person who is responsible for their safety or have received instructions from the responsible person in how the device should be used.
- Wear suitable work clothes, tie long hair together and do not wear any jewellery in order to prevent them from getting caught by moving parts.
- Always wear safety glasses when grinding.
- Always hold the drill bit tight and wear work gloves to protect against injury.
- Check the state and fixing of the protective equipment and never remove any mechanical or electrical protective equipment.
- Do not work with a damaged grinding stone. There is a risk of injury. Replace a damaged grinding stone immediately.
- Also observe these safety instructions when using the grinding machine.
- Do not grind damaged or broken drill bits.
- Do not use the drill grinding attachment if it is damaged.

PREPARATION

Unpack the twist drill grinding attachment and check the parts for potential transport damage. For the grinding itself, you need a normal firmly mounted grinding machine (e.g. double grinder). Use a fine grinding disc or a grinding disc for carbide. Mount the drill grinding attachment in front of the grinding stone such that the drill bit can be conveniently guided to the grinding disc.

MAINTENANCE, CLEANING AND STORAGE

Thoroughly clean the drill grinding attachment after each use, and remove the grinding dust. For cleaning, use only a dry cloth. Do not use any cleaning agent containing solvents, industrial alcohol or alcohol.

Do not immerse the attachment in water and never expose it to any moisture!

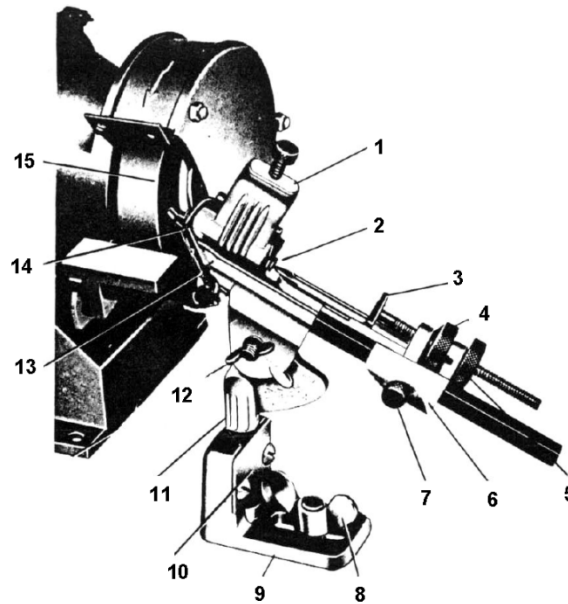
Keep the attachment and, in particular the adjustment screw free from oil and grease.

Change a damaged grinding stone immediately otherwise there is a high risk of injury.

STRUCTURE

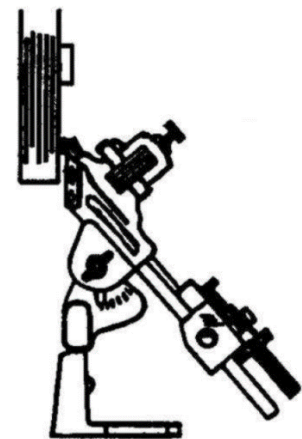
No.	Designation
1	Spring mounted attachment
2	Bit tray
3	Bit stop
4	Adjustment screw
5	Control screw
6	Feed slide
7	Feed slide lock screw
8	Wing nut

No.	Designation
9	Slotted base
10	Horizontal swivel bearing
11	Swing axis
12	Thumbscrew
13	Bit lip stop
14	Bit tray tip
15	Grinding disc



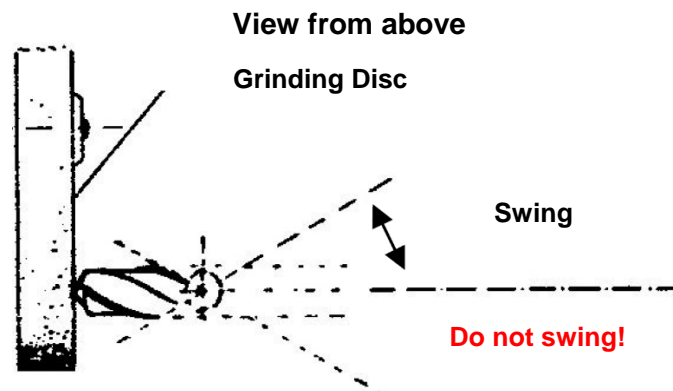
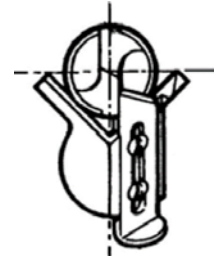
MOUNTING

1. Firmly mount the grinding machine, e.g. on a workbench. In doing so, make sure that sufficient space is available at the side of the grinding machine for the installation of the drill grinding attachment. In addition, the grinding disc protective cover disc must be adjusted to enable the free area of the grinding disc to be opposite the drill grinding attachment. The drill bit should be sharpened by an area of the grinding disc that is on the left of the drive hub of the machine and which is preferably at the same level or slightly lower than the drive hub of the grinding machine.
2. Position the drill grinding attachment in front of the grinding disc and parallel to the grinding disc. Mount the drill grinding attachment with a wing nut (8) onto the workbench (distance to the grinding disc approx. 6 cm). If necessary, insert a spacer (wood) in order to obtain the correct height to the grinding disc.
3. To determine the correct distance from the grinding disc, if necessary, insert a drill bit and fit the attachment exactly in front of the grinding disc.



USE

1. First, select the desired grinding angle by using the thumbscrew (12) according to the intended use of the drill bit:
 59° - general use
 88° - thin materials, prevents tearing
 68° - for thin drill bits with fast feed
 49° - for soft metals such as copper, lead, soft alloys
 41° - for countersinks
2. Loosen the feed slide (6) with the screw (7), turn back the adjustment screw (4) completely and then insert the drill bit. The bit must protrude beyond bit tray tip (14) with its point at a dimension equal to its diameter.
3. Now firmly tighten the feed slide lock screw (7) and the attachment screw of the attachment (1) slightly, only enough that the drill bit is just held. Make sure that the spiral groove of the drill bit rests against the stop.
4. Loosen the wing nut (8) in the foot of the drill grinding attachment and move the attachment in order to achieve a offset of the drill point of approx. 0.5 mm from the grinding disc. In doing so, the bit tray tip (14) must be positioned precisely vertically in front of the grinding disc.
5. Slightly loosen the control screw (5), switch on the grinding machine and push the drill bit forward by turning the adjustment screw (4) until the drill bit touches the grinding disc. Then swing the entire attachment (hold at the feed slide) **to the right**. This will automatically create the correct cut.



As the swing axis (11) is not exactly situated in the centre of the bit tray (2). This "inaccuracy" effects right edge grinding and relief grinding. Therefore you have to swing the swing axis (11) to the right only.

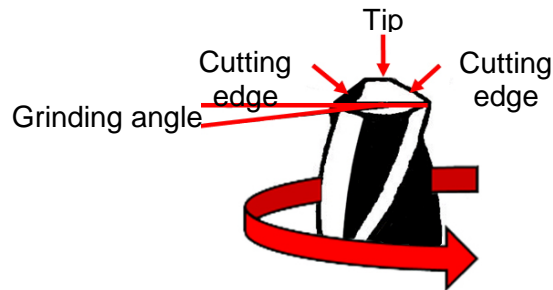
Depending on the degree of wear of the drill bit, push the drill bit further forwards by using the adjustment screw (4). However, this should be done slowly in order to prevent the drill bit from overheating and becoming annealed soft. If longer grinding is necessary, take breaks for cooling down. After grinding one side of the drill bit, screw the control screw (5) tightly. This defines the same position for the other flank.

6. Loosen the lock screw of the attachment (1) and take out the drill bit. Turn it, so that now the other flank rests against the stop. Turn back the adjustment screw (4) and repeat the grinding process for this flank. If the drill bit is heavily worn, repeat the grinding process.
 If this still does not achieve the desired appearance of the drill bit point, repeat the grinding with the drill bit pushed out further beyond the stop (by more than one drill bit diameter). See further instructions about the correct sharpening of drill bits in the chapter below.

CORRECT GRINDING, CAUSES OF FAULTS AND CORRECTION

- Despite machine assistance using the pre-set grinding angles and movements, the correct grinding of a drill bit requires some experience, and in-particular, care during the handling of the drill bit.
- Below you will be provided with several hints about the correct grinding of the drill bit and how to avoid faults. However, this information cannot guarantee the correct grinding of the drill bit – in the end, your own skill, adherence to the operating instructions, the state of the drill bit and the grinding disc will determine the result

DEFINITIONS



- Do not touch the drill bit tip after grinding! There is a danger of burns!
- Before carrying out any work on the device, switch off the grinding machine and pull out the mains plug from the socket. Do not carry out any work while the machine is running!
- Do not grind for too long. Check the grinding process at regular intervals! Reduce the pressure on the drill bit during grinding.
- Drill bits with a large diameter must be ground for longer until they are sharp again. Grind both sides alternately in several short sessions.
- Allow the drill bit to cool down between sessions, or cool it in water.
- If the tip has turned blue, it has been overheated during grinding. Cool the tip in water.
- If the tip is not in the centre (one flank is sharp, the other is not), regrind the shorter flank. This fault is avoided by uniform pressure on the drill bit during grinding on both flanks as well as identical grinding times for both flanks.
- In particular for drill bits with large diameters and major wear, grinding with the drill bit sharpener may, under certain circumstances, not lead to a satisfactory result. Observe that the attachment is mainly intended for periodical re-sharpening but not designed for the complete re-working of much worn thicker drill bits.



The angle of the tip is adjusted by the predefined grinding angle and the swivelling range when grinding.

The tip angle may deviate depending on the material.

Aluminium: 130 - 140°

Copper, brass: 120 - 130°

Steel, cast iron: 110 - 120°

Plastics: 50 - 90°

Tip angle 125 – 135°	Grinding angle h 8 – 12°	Grinding angle k Adjustable with the thumbscrew (12)	Incorrect Edge curving backwards	Incorrect Edge curving forwards	Correct
