SIDAMO
OUTILS & SERVICES TECHNIQUES

ORIGINAL INSTRUCTIONS

DRILL SHARPENER
3 to 18 mm

SUMMARY

1. INTRODUCTION

For safety reasons, read this instruction manual carefully before using this accessory.
Any non-observance of the instructions will cause damage to persons and/or to the accessory.

This instruction manual is intended for the operator, the adjuster, and the maintenance agent.

This instruction manual is an important part of your accessory. It gives rules and guides that will help you use this accessory safely and effectively. You should familiarize yourself with the functions and operation by carefully reading this instruction manual. For your safety, it is particularly important that you read and observe all the recommendations on the accessory and in this instruction manual.
These recommendations must be strictly always followed during use and maintenance of the accessory. Failure to follow the safety guidelines and warnings in the instruction manual and on the accessory and/or use other than that recommended in the instruction manual may lead to accessory failure and/or injury.

Please always keep this instruction manual with the accessory or in an easily accessible place for future reference. Make sure that all personnel involved in the use of this accessory can consult it periodically. If the instruction manual is lost or damaged, please consult us or your dealer to obtain a new copy.

Always use SIDAMO components and parts. The replacement of components or parts other than SIDAMO may cause damage to the accessory and endanger the operator.

This manual describes the safety instructions to be applied by the user. It is the responsibility of the employer or the user, according to article L.4122-1 of the labor code, to take care of his health and safety and that of the other persons concerned by these acts or omissions, in accordance with the instructions given to him.
The employer must carry out an assessment of the risks linked to his activity, must train the workers in the accessory and in the prevention of these risks, and inform in an appropriate manner the workers responsible for the use or maintenance of the equipment of work, instructions or instructions concerning them.

2. PICTOGRAMS

2.1. PICTOGRAMS PRESENT IN THIS INSTRUCTION MANUAL

Direct danger to people and accessory damage

Possible damage to the accessory or its environment

Note

Level of technical capacity: operator, user
Level of technical ability: adjuster, maintenance

3. SECURITY

3.1. GENERAL SAFETY INSTRUCTIONS

To reduce the risk of fire, electric shock, mechanical shock, and injury to persons when using power tools, follow basic safety requirements.

This instruction manual only takes account of reasonably foreseeable behavior.

Our accessories are designed and produced always considering the safety of the operator.
We decline all responsibility for any damage due to inexperience, incorrect use of the accessory and/or its damage and/or non-compliance with the instructions and safety rules contained in this instruction manual.
Generally, accidents always occur because of improper use or failure to read the instruction manual.
We remind you that any modification of the accessory will result in a disengagement on our part.
Check the presence, condition, and operation of all protections before starting work.
Make sure that the moving parts work correctly, that there are no damaged elements and that the accessory works perfectly during its commissioning.
Only competent and authorized personnel are authorized to repair or replace damaged parts.

Maintain a clean and orderly work area.
Ensure that the entire working area is visible from the working position.
Cluttered work areas and benches are a potential source of injury.
Do not use the accessory with a reel outdoors, in very humid rooms, in the presence of flammable liquids or gases.
Position the accessory in a sufficiently lit work area.
The accessory is prohibited for young workers under the age of eighteen.
Do not allow anyone, especially children or animals, not allowed in the work area, to touch tools or electrical cables and keep them away from the work area.
Never leave the sharpener and grinder while in operation. Always switch off the mains supply. Only leave the reel when it is completely stopped.

 Do not force the tool, it will do a better job and be safer at the rate for which it is intended.
Do not force small tools to do the job of a larger tool.
Do not use tools for work for which they are not intended.

 Don't assume your strengths.
Always maintain a stable position and good balance.
Watch what you are doing, use common sense and do not use the accessory when you are tired.
Always use both hands to operate this accessory.

The use of any accessory, other than those described in the instruction manual, may present a risk of injury to persons.

The user is responsible for his accessory and ensures that:

- The sharpener is used by persons who have read the instructions and are authorized to do so.
- The safety rules have been respected.
- Users have been informed of security rules.
- Users have read and understood the instruction manual.
- Responsibilities for maintenance operations and possible repairs have been assigned and observed.
- The defects or malfunctions were immediately notified to an authorized repairer or to your retailer.
- The sharpener must be used in the fields of application described in this manual.
- Any use other than that indicated in this instruction manual may constitute a hazard.
- Mechanical protections must not be removed or bypassed.
- No modification and/or reconversion should be made.

SIDAMO declines all responsibility for damage caused to people, animals, or objects because of non-compliance with the instructions and safety rules contained in this instruction manual.

3.2. SPECIAL SAFETY INSTRUCTIONS

Follow the reel's specific safety instructions according to its instructions.

Special safety requirements for the drill sharpener.

Allow the wheels time to reach their maximum speed before starting to sharpen.
Adjust reel shields and spark arrestors to protect the operator from flying sparks.
Wearing appropriate personal protective equipment is compulsory.
Do not strike the bit on a grinding wheel but apply progressive pressure.
Cool the drill to be sharpened in a water container.
Do not touch the moving wheels.
Wait for the grinding wheels to come to a complete stop before doing any manipulation on the sharpener and reel.
Do not add additional accessories for operations for which they are not designed.
The use of an inappropriate accessory is synonymous with the risk of accidents.

Dangerous phenomena:

Mechanical:

- Risk of entanglement or winding up for the operator during manual operations near a grinding wheel.
- Operator entrapment or entrapment hazard when operating manually between a grinding wheel and grinder components, especially near the workpiece support or between a grinding wheel and the workpiece.
- Risk of friction or abrasion for the operator during involuntary contact with a rotating grinding wheel.

Materials and products:

- Risk of inhalation of harmful dust released by the grinding wheels for the operator or other persons having access to the area around the bench grinder during grinding operations.

Falling or overturning of the accessory:

- Risk of injury to the operator if the accessory is not attached.

3.3. OPERATOR PROTECTION

For the safety of the operator, ensure that the sharpener is in good condition and that the protective screens and grinding wheel guards are present. Ensure that the non-working parts are always covered by a protective casing.

This accessory is designed for a single operator.
The operator must wear suitable personal protective equipment when sharpening with a bench grinder:

- Protective glasses.
- Ear protection.
- Safety shoes.
- Protective gloves.
- Respiratory protection.

The operator must wear close-fitting clothing and, if necessary, caps for long hair.
The operator must not wear, for example:

- Loose clothing, wide sleeves.
- Bracelets, watch, alliance, jewelry.
- Any other object that could catch on the moving parts of the accessory.

4. DESCRIPTION AND OPERATION

4.1. INTENDED APPLICATION OF SHARPENER

The drill sharpener is a bench grinder accessory intended for dry grinding operations (sharpening a drill surface using the periphery of the grinding wheel):

- for wood and steel drills: bench grinder A or AA (corundum).
- for concrete drill bits (tungsten): bench grinder C (carbide).

In the case of improper use or sharpening of materials other than those mentioned above, the manufacturer declines all responsibility.
Under proper conditions of use and maintenance, operational safety and work are guaranteed for many years.
To do this, explore the accessory in its different functions.

4.2. CHARACTERISTICS

- Auxiliary drill sharpener to be fixed on a workbench next to the bench grinder.
- To guide the sharpening of drills from Ø 3 mm to Ø 18 mm.
- Easy distance adjustment thanks to the groove in the base.
- Advance of the drill bit towards the grinding wheel with a wheel that acts on the depth adjustment screw.
- Adjustable angle from 41° to 88°.

4.3. SHARPENER DESCRIPTION

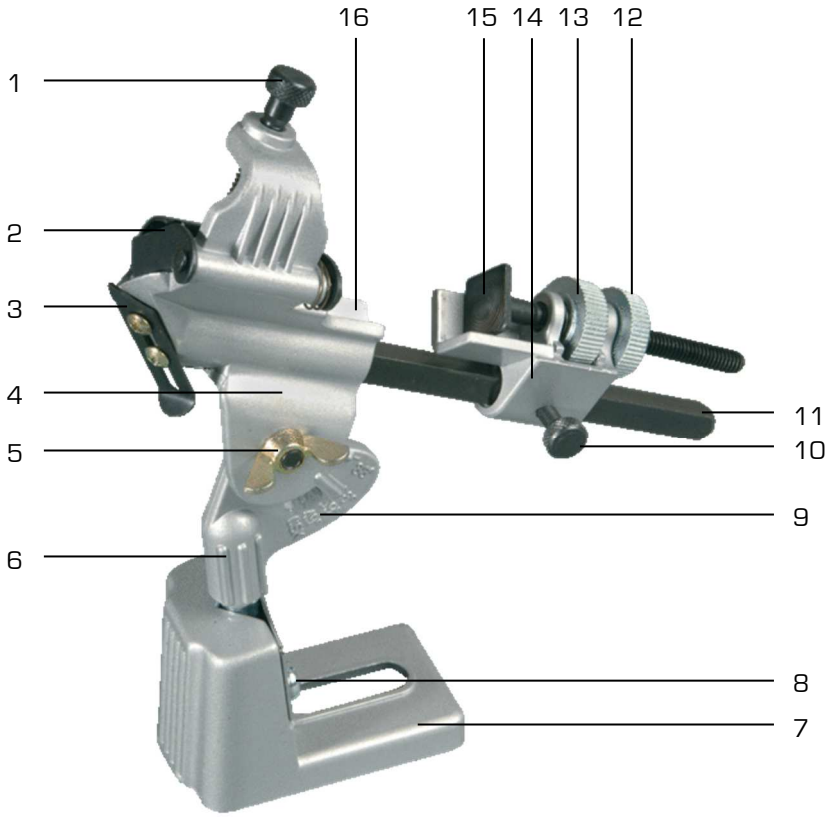


Figure 1

1. Flange tightening screw
2. Flange
3. Sharpening stop
4. Slide support
5. Angle adjustment wing nut
6. Pivot
7. Based
8. Tension adjustment screw
9. Angle indicator
10. Carriage tightening screw
11. Closed off
12. lock nut
13. Advance screw
14. Cart
15. Stopper
16. Slide

5. INSTALLATION

5.1. CONDITIONING

The drill sharpener is packaged in plastic packaging, making it easy to handle and store.
When unpacking, remove each element of the sharpener, check the general condition then proceed with assembly.

If the accessory does not seem correct to you or if elements are broken or missing, contact your retailer.
Keep the instruction manual for future reference.

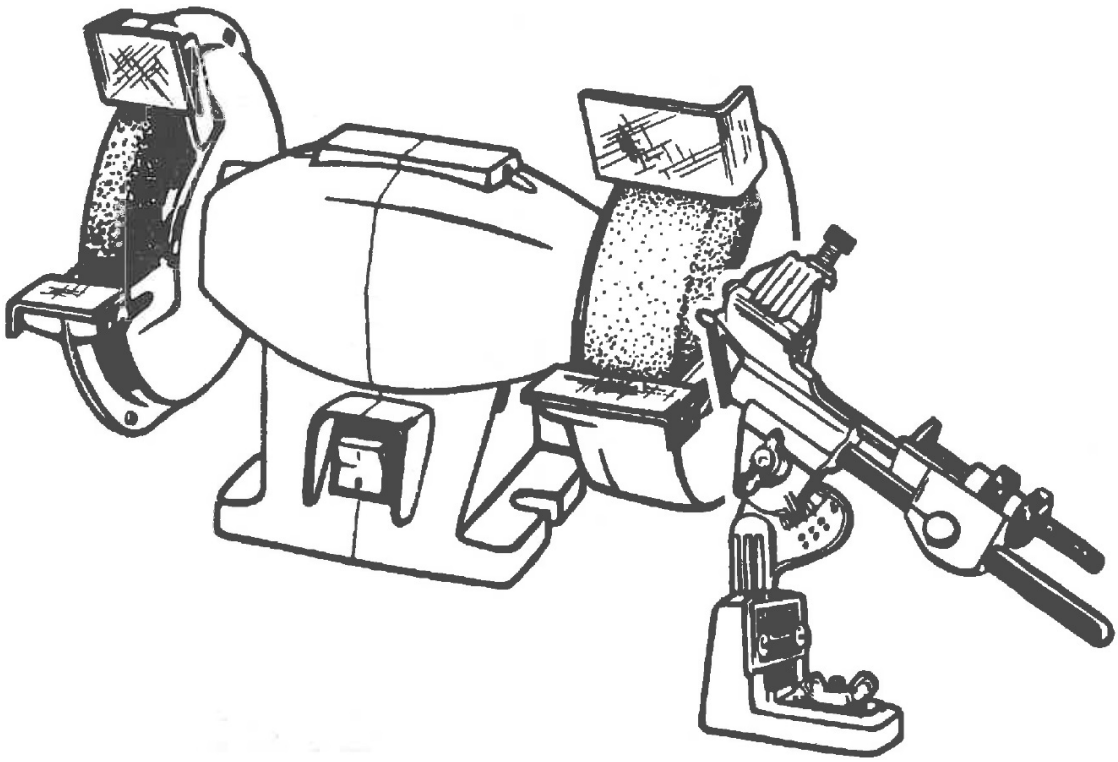
5.2. ASSEMBLY

Fix the drill sharpener on a suitable base or on a workbench using the base anchoring point provided for this purpose.

For positioning on the workstation, install the sharpener at a height allowing good working comfort.
The recommended height is 70 to 80 cm from the ground.

- The bench grinder and sharpener should be securely fastened to a workbench. The sharpener will be positioned at right angles to the wheel.
- The upper part of the slide should be placed close to the center of the grinding wheel.
- To fix the sharpener to the workbench, use a bolt with a washer and a nut.
- The distance between the side face of the grinding wheel and the bolt fixing the sharpener to the workbench should be approximately 60 mm. An adjustment can be made thanks to the oblong hole provided on the base of the sharpener.

✓ For safety reasons, we remind you that it is mandatory to fix the drill sharpener on a base or on a workbench.



6. USE

Comply with the special safety instructions for the drill sharpener (paragraph 3.2).

Before any manipulation, familiarize yourself with the devices of the sharpener.

Make sure the drill sharpener is securely locked to a workbench or pedestal.

Wearing appropriate personal protective equipment is compulsory.

We urge you to periodically check the condition of your sharpener.

6.1. PROCEDURE

Keep hands away from sharpening areas when using the sharpener.

When sharpening, risk of flying sparks or flying debris.

Manual sharpening must always be carried out with great care, risk of contact with the wheel (catching, burning, pinching, abrasion or crushing).

Do not exert excessive pressure on the bit. The sharpening performance is not improved by high pressure on the bit, but the life of the bit will be reduced.

1. Remove the slide support (4 fig.1) from the base (7 fig.1) by unscrewing the angle adjustment wing nut (5 fig.1).
2. Place the bit in the slide (16 fig.1). Adjust the sharpening stop (2 fig.1) so that it rests against the cutting angle of the bit. Adjust the length of the drill using the feed screw (13 fig.1) against the stop (15 fig.1) to hold the drill properly in position, considering the protrusion of the drill. Tighten the lock nut (12 fig.1) to keep it in this position. Tighten the flange (2 fig.1) using the screw (1 fig.1) and fix the sharpening stop (3 fig.1) correctly.
3. Replace the slide support (4 fig.1) by adjusting the angle indicator (9 fig.1) to the desired sharpening angle.
4. Using the oblong hole in the base (7 fig.1), approach the sharpener until the tip of the bit is about 0.5 mm from the side face of the grinding wheel. Tighten the base (7 fig.1) using a bolt with a washer and a nut.
5. When sharpening, proceed with small successive strokes from front to back using the pivot (6 fig.1). If it pivots with difficulty, slightly loosen the tension adjustment screws (8 fig.1).

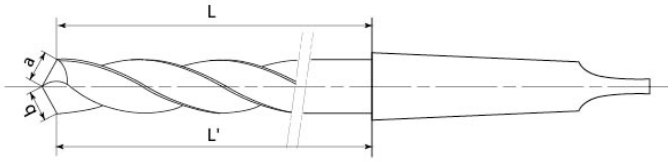
   The tension is used to avoid sharpening too quickly in a single pass which could cause the drill to turn blue.
6. Gradually approach the bit using the feed screw (13 fig.1) until the entire lateral surface of the bit is in contact with the grinding wheel.
7. Stop the bench grinder. Do not touch previously made settings.
8. To sharpen the second face of the bit, pivot the slide support (4 fig.1) to move it away from the grinder. Loosen the bit clamp (2 fig.1), turn the bit in the guide (16 fig.1) until the opposite cutting angle comes against the sharpening stop (3 fig.1). Tighten the flange (2 fig.1).
9. Do not change any of the previous settings to sharpen the second side. Proceed in the same way as for the sharpening of the first side, in several progressive passages.

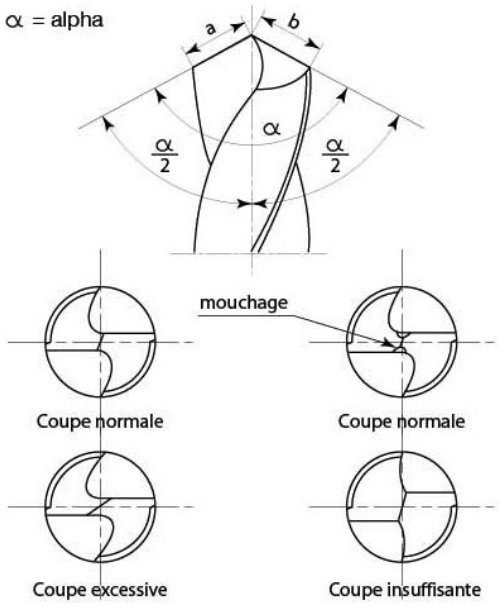
CLEARANCE OF THE DRILL FOLLOWING THE ANGLE INDICATOR

Point angle	Clearance	Use
88°	1.60mm	Very hard or thin materials
68°	½ the diameter of the drill bit	Intensive work or small diameter drills
59°	½ the diameter of the drill bit	General employment
49°	1 time the drill diameter	Soft materials (copper, lead, wood, plastic, etc.)
41°	1 time the drill diameter	Zinc, wood, hard rubber, fibers, countersinking...

6.2. CRITERIA FOR CORRECT SHARPENING

- The angleα (alpha) must be equal on each side and a = b.
- The cutting edges, or lips of the drill, are determined by the intersection of the helical grooves with the clearance surface. These two cutting edges form, at the end of the drill, a point angle (alpha). The perfect calibration of the hole made requires that these two cutting edges have the same length and the same inclination with respect to the axis of the drill.
- The core is the solid central part left by the execution of the two grooves. The thickness of this core, increasing with the increase in the diameter of the drill, is a serious obstacle to its penetration into the material. To remedy this, grind the end of this core by carrying out two small thinning operations, using the angle of the grinding wheel for this, presenting the core of the drill perpendicular to the angle of the grinding wheel. Interesting operation for drills with a Ø greater than 8 mm.
- The listels are unstripped guide surfaces, narrow enough to prevent the bit from clamping in the housing it creates. It is on the walls of the hole that the listels rest to carry out the guidance of the drill. It is also on them that the measuring instruments apply to provide the diameter.
- The grooves, cut in helix in the cylindrical part of the drill, are used for its lubrication and the evacuation of chips. Their inclination with respect to the axis of the drill provides the angle of sharpening slope whose value of 25° to 30° corresponds to the average cut of common metals. The pitch of a drill helix is about six times its diameter.
- For sharpening the drill, use:
  - a protractor and a ruler for measuring the cutting edge.
  - a specific caliber.
  - a ruler: measure the lengths of each cutting edge and then measure the length of the point formed between the listel and the cutting edge and any point, symmetrical on each side, of the drill (a = b and L = L').





α (alpha): drill tip angle
a and b: lengths of the cutting edges