INSTRUCTION BOOK

ELITE model B 20

Drill grinding machine up to ø 20 mm.

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CE Declaration of Conformity for Machinery

Hereby, the company **Elite Sharpening Machines, SLU**
C/Joan Oró, 27
ES-08635 Sant Esteve Sesrovires,
Spain

declares that the product indicated below, on the basis of its design and construction, as well as the version placed on the market by our company, complies with the mandatory basic health and safety requirements of the CE directive.

This declaration becomes invalid if any unauthorised modifications are made to the product.

Product name:	**ELITE B 20**
Product type:	**Drill sharpening machine**
Serial number:	**---**

Competences	**Machinery Directive CE (2006/42/CE)**
CE Directives:	**European Directive on electromagnetic compatibility (2014/30/UE)**
	The protection purposes of the CE Low Voltage Directive (2006/95/CE) were complied with in accordance with Annex I, no. 1.5.1 of the Machinery Directive 2006/42/CE

The technical documentation	**Sergi Valls Gramunt**
was compiled by representative	**C/Joan Oró, 27**
legal documentation:	**ES-08635 Sant Esteve Sesrovires**

Date / Manufacturer - Signature: _____

Signatory data: Sergi Valls Gramunt, Manager

Intended use

The ELITE model B-20 drill bit sharpener has been designed exclusively for:

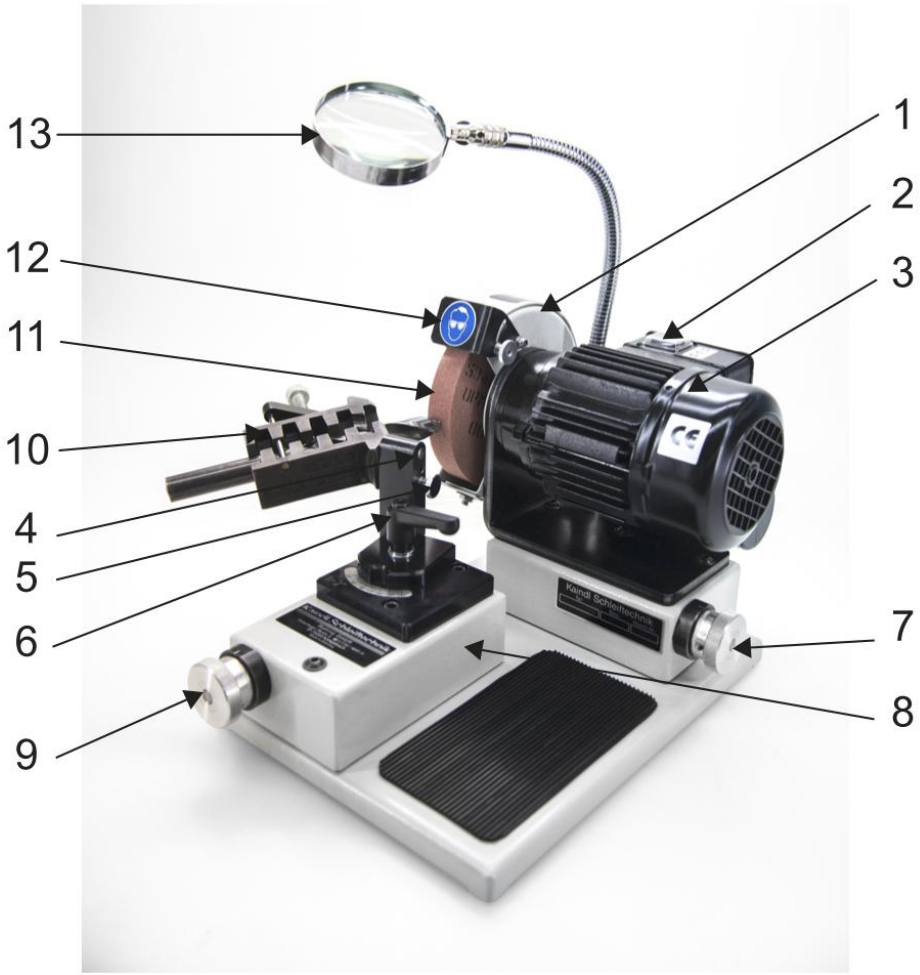
- Sharpening twist drills, bi-diameter drills, wood drills, sheet metal drills and wood (hard metal) drills.

The machine must not be used for other uses than those specified otherwise it will be established as improper use.

Direct use also includes the reading of this manual as well as the assimilation of the operating instructions, especially the one concerning safety.

In the case of the ELITE model B-20 a use other than that for which it is intended, safety is no longer guaranteed.

Main parts of the machine



1. Grinding wheel cover, complete
2. Motor 230V Single-phase
3. Start-up switch
4. Drill bit prism support
5. Wing screw
6. Upper angle adjustment cam.
7. Hexagonal screw for fixing the motor bracket
8. Knurled nut with vernier to give the motor load
9. Knurled nut with vernier for drill bit feed
10. Reversible clamping prism with capacity from 2 to 20 mm.
11. Corundum grinding wheel
12. Adjustable cover
13. Magnifying glass

Use description

Elite model B 20 portable drill bit sharpening machine is unique in its design and offers a considerable alternative to more expensive equipment.

With its sturdy construction, high accuracy, the little space required and economical price, the ELITE model B 20 is an indispensable auxiliary equipment and a real measure of optimisation for both one-off operations and workshop use.

This sharpening machine facilitates the adjustment and re-sharpening of twist drills so that any operator can re-sharpen drills at the most diverse angles.

The automatically reversible prism ensures maximum precision and symmetry of cuts.

Technical features

Net dimensions:	290 x 220 x 250 mm..
Net weight:	13,5 Kg.
Standard capacity	2-20 mm. Ø
Grinding wheel	125x20x20 mm.
Noise emission:	< 70 dB(A)
Voltage:	230 V. 50 Hz single-phase

Additional accessories

- CBN grinding wheel ø 1 25 mm grit B1 26/3, covered on 3 sides, broad 20 mm
- CBN grinding wheel ø 1 25 mm grit B76/3, covered on 3 sides, broad 20 mm (standard) 1 7556 CBN grinding wheel ø 1 25 mm grit B46/3, covered on 3 sides, broad 20 mm
- Corundum grinding wheel 1 25 x 20 x 20 grit 60 (coarse)
- Corundum grinding wheel 1 25 x 20 x 20 grit 80 (standard)
- Corundum grinding wheel 1 25 x 20 x 20 grit 1 80 (very fine)
- Corundum grinding wheel 1 25 x 05 x 20 grit 1 00 (HSS wood bits)
- Corundum cup wheel grit 60 (standard) for SZ
- Corundum cup wheel grit 80 (medium) for SZ
- Corundumcupwheel grit100(fine)forSZ
- Grinding wheel support

- Diamond grinding wheel D 76, covered on 3 sides for carbide wood drills
- Diamond grinding wheel D 76, covered on 3 sides for carbide drills
- Diamond cup wheel D 1 26 (standard) for SZ
- Diamond cup wheel D 76 (fine) for SZ
- Universal clamping device for single-lip cutters, cut off tools, etc. for SZ
- Magnetic depth stop for cutters
- Countersink sharpening device SVR 20 with collet 1 0 mm
- Collet 6 mm for SVR 20
- Collet 8 mm for SVR 20
- Collet 12 mm for SVR 20
- Morse taper sleeve MK1
- Morse taper sleeve MK2

Safety simbology

The following safety symbols are used in this manual.

These must be understood by the user and are explained below.

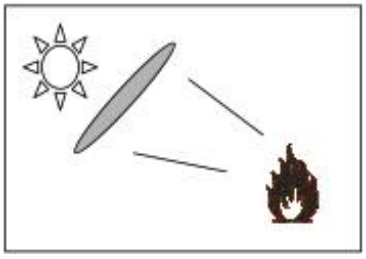
They indicate that the use without observing them can lead to danger to life and limb of the users.

	Safety goggles must be worn to prevent damage caused by particles released during the sharpening process.

	Use with caution and care.

	When the machine is moved, it must be disconnected from the power supply.

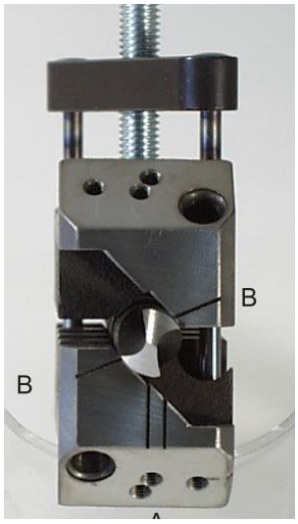
Lenses should be covered after each use:



Lenses should be covered after each use

Operation

Fastening and adjustment of drill bits



The reversible prism has a sharpening range from 2 to 20 mm. Fixing and alignment of the drill bits is achieved in the simplest way. The prism is opened by means of the knurled screw provided for this purpose. Once opened, insert the drill bit to be sharpened.

Hold the drill bit so that the tip protrudes 15 to 20 mm. In front of the clamp. Close the clamp gently with the knurled screw so that you can still turn the drill bit by hand.

The only thing to do now is to align the cutting edge of the drill bit so that it is parallel to the two marks shown.

Mark A: for right-hand drills Mark B: for left-hand drills

Once adjusted, we finish clamping the clamp by hand and we can now proceed to sharpening.

In addition to the basic settings, the rake angles can be adjusted depending on the material to be cut.

If you want a higher rake angle - more cutting capacity, you should move the bit a little to the left (less angle on the prism). If you want less rake - less cutting capacity, just move it a little to the right.

In this way we can adjust to the angles required for each material.

In the case of sharpening a broken drill bit, as it has no cutting edge to adjust, we must cut so that it lies flat. Then we can adjust the ends of the cutting edge as close as possible to the adjustment marks and resharpen until a new cut appears, and we can adjust as above.

Cutting angle adjustment.

In order to always work according to the material properties, we can infinitely adjust the cutting angle.

The most common cutting angles are 118°, 130° and 80°.

These angles are marked on the base and can be quickly adjusted by opening the clamping cam (pos. 6 on page 7) and moving the prism base (pos. 4 on page 7).

Grinding of the grinding wheel

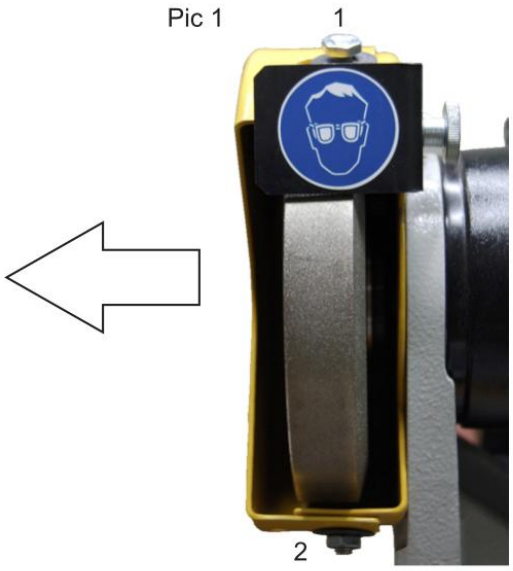
To carry out the diamond dressing process, loosen the positioning cam on the tool holder support and set the position to 150°.

Fix the diamond dresser in the tool holder and fix it by means of the knurled screw in the lower position of the holder.

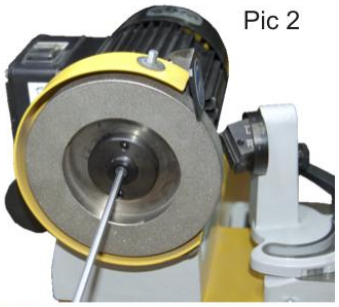
Move the motor smoothly to the right and left while slowly advancing the diamond dresser towards the grinding wheel, once they come into contact, the advance should be smooth.

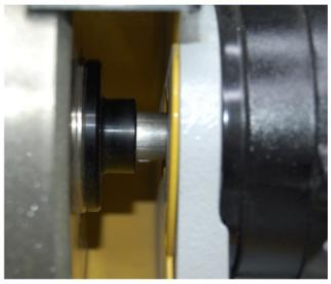
Grinding wheel replacement

Pic 1

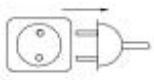


Pic 2





Pic 3



To change the grinding wheel, disconnect the machine from the power supply.

Open the two screws 1 and 2 of the guard with a 10 mm spanner. Remove the grinding wheel guard.

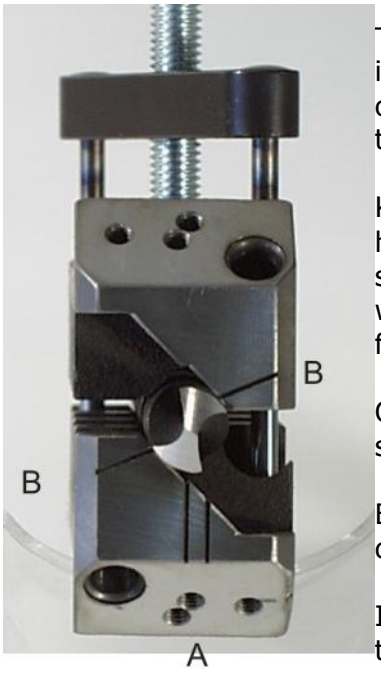
Loosen the hexagonal screw with a 4 mm Allen key. Turn the screw until the grinding wheel can be removed with the grinding wheel holder.

Insert the new grinding wheel into the motor shaft and tighten the screw again, then tighten the grinding wheel guard. Check that the grinding wheel is correctly mounted.

Grinding wheels must conform to EN 12413 or EN 13236. After changing the grinding wheel, carry out a 1-minute test run with the motor running. If the grinding wheel does not work properly, switch it off and look for the reason for the malfunction.

Never use the machine without the grinding wheel cover installed.

Drill bit sharpening, drill bit clamping and adjustment



The reversible prism has a drill bit range from 2 to 20 mm. To insert and align the drill bit we must follow a few simple steps, open the tool holder by means of the knurled screw provided for this purpose, now we can insert the drill bit.

Keep the tip of the drill bit between 15 and 20 mm. Out of the tool holder. Then close the clamp slightly by means of the knurled screw, so that we can still turn the drill bit by hand. At this point we should adjust the drill bit parallel to the two existing marks (**A** for right-hand drills and **B** for left-hand drills).

Once the cut has been made, the clamp must be closed, do not start sharpening unless the clamp is correctly closed.

By varying the basic setting shown, the rake angle can be varied depending on the material to be drilled.

If it is required a larger cutting angle, with more cutting capacity, then it should be adjusted a little more to the left (less graduation on the tool holder). If we want less cutting angle, with less cutting capacity but more durability, we should adjust a little more to the right (more graduation on the bit).

In the case of a broken bit, without a cut to fit, the bit should be sharpened to a point shape. Align the corners as close as possible to the adjustment lines and re-sharpen the drill bit until a sharp edge appears, then adjust as above.

Cutting angle adjustement

In order to work according to the properties of the material, the cutting angle must be adjusted accordingly.

The most common cutting angles are 118º, 130º and 180º.

The angles are clearly marked on the pivot base of the prism. They can be easily adjusted by opening the cam that holds the base.

Drill sharpening

Wear safety goggles!!

Once the tool holder is properly aligned, fix it on the clamping base in front of the grinding wheel (page 6 no. 4) and rotate it manually. At the same time, move the feed of the tool holder in the direction of the grinding wheel by means of the vernier (page 6 no. 5), until we have a well-shaped cut.

We note the final position of the feed vernier once we have a well-formed cut and remove two or three positions by means of the vernier. The drill bit should be moved up and down until the sparks stop coming out.

To achieve the best cutting symmetry, the tool holder should be rotated 180º without changing the position of the feed. The other cut should be sharpened until sparks should appear.

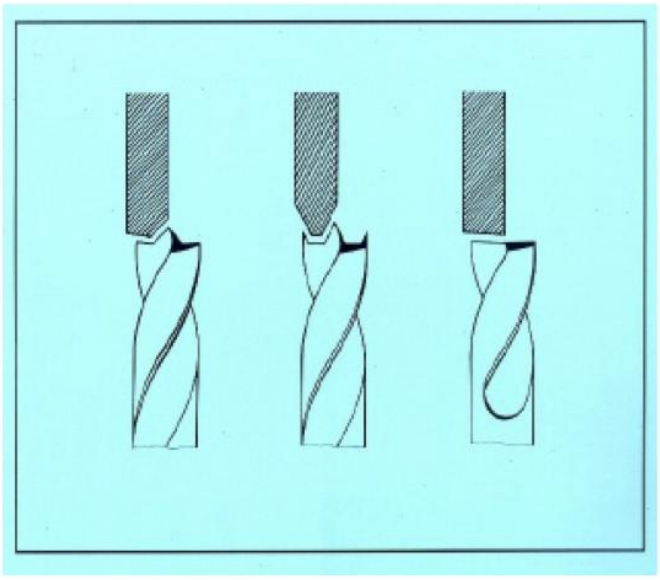
CAUTION!

To prevent the drill bit from overheating and becoming crystallised, we must work with small feeds.

Sharpening of bi-diametric drills

For this type of drill bits we must sharpen the first part as in the previous process for standard drill bits. The cuts of the second cutting edge must be placed in the same position (see the section "alignment and adjustment of the drill bit"). Once the drill bit is in the same position, we must extract it so that it is positioned as shown in the photograph. Using the knurled screws 7 and 9 we can achieve the fine adjustment with respect to the grinding wheel. The sharpening process is the same as described for sharpening standard drill bits.

Sharpening of drills for sheet metal, wood and milling cutters



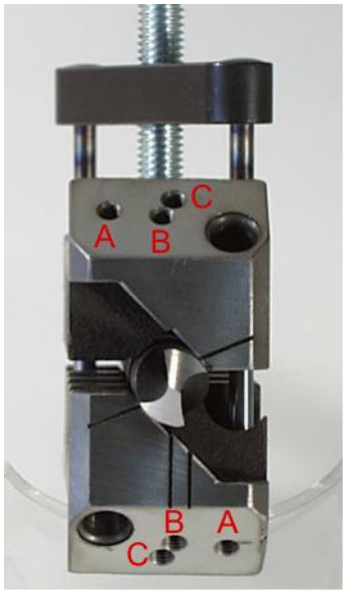
For this type of drill we recommend the use of profiled grinding wheels.

Remove the clamp from the holder and position it on the adjustment line of the drill carriage. The adjustment of the drill bit is identical to that of conventional twist drills. The fine adjustment of the drill bit to the grinding wheel is carried out by means of the screws (Positions 7 and 9 on page 7).

Do not start the grinding wheel motor until the adjustment is completed. In the case of milling cutters the prism is fixed with the knurled screw in the lower position, fixed on the side of the prism holder (Position 5 page 7).

By moving forward with the vernier, we sharpen one cut and by turning the tool holder a half turn we can sharpen the second cut. For tools with 3 or 4 cutting edges we need the magnetic brake (optional).

Core emptying of twist drills



With the new clamping prism, it is now possible to empty the core of the already sharpened drill bit.

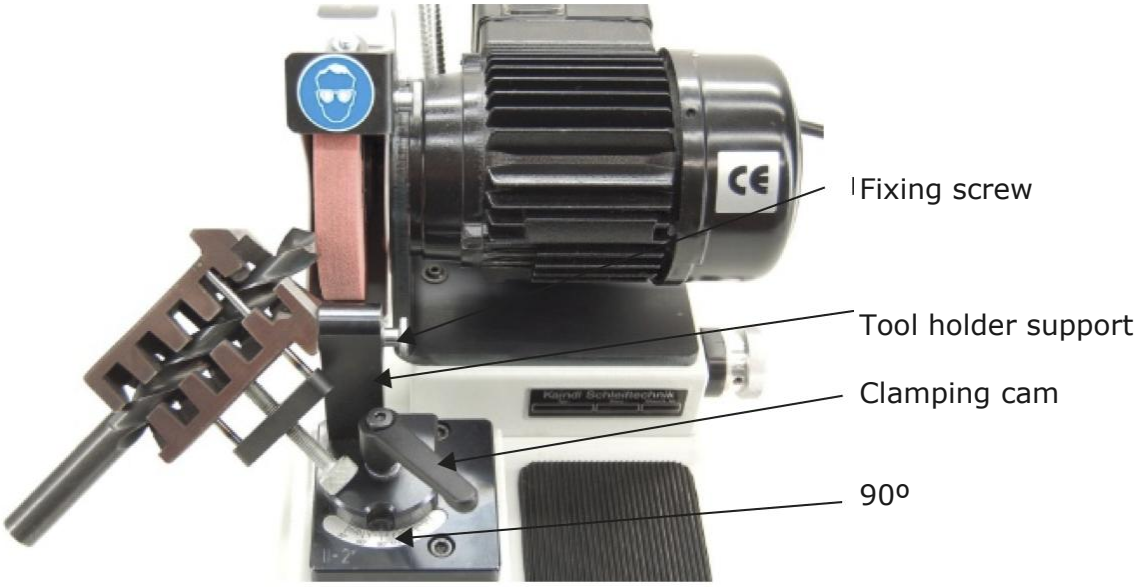
1. Holes **A** and **B** are for sharpening 4-faceted drills.
2. Hole **C** is used for coring.

For core drilling, we have to position the drill bit 25 mm outside the tool holder without changing its position in the prism. Outside the tool holder without changing the position of the drill bit in the prism. Fix the tool holder with the knurled screw in position **C**.

Use the upper position of the tool holder. Release the clamp and position the holder at 90°.

By means of the tool holder and the movement of the motor, we can perform the core casting using the left side of the grinding wheel.

Once one side is finished, note the position of the vernier and move the position back one turn. Now we can turn the tool holder **180°**, fix it again in the hole C and move the vernier to the noted position.



Spare parts list

Ref.	Description
11303	2-20 mm tool holder.
17840	Tool holder support
10546	M8 locking cam with washer for fixing the bracket
16556	Fixing screw for clamping the tool holder
10554	Pin 7 mm. For tool holder bracket
10888	Diamond cutter without diamond
10550	Diamond for diamond cutter
10556	Nonium for drill bit advance
10557	Nonium for motor movement
10563	Grinding wheel cover
10565	230 V. Motor. 50 Hz. 2800 RPM.
10567	Vent protector
10568	Fan
10570	Switch
10571	Switch box without switch
15422	Complete grinding wheel holder without grinding wheel.

Only use original spare parts!

Maintenance and greasing

For a long life of the machine in perfect condition it is important that it is cleaned and greased regularly.

Daily: Remove any dust that may remain in the **working area**. (Do not use compressed air!).

Weekly: Clean the machine thoroughly **and spray all moving parts with oil spray.**

The machine is equipped with grease nipples for greasing the guides, keep them clean with a cloth.

The motor bearings are lubricated for life. **In extreme cases**, such as high humidity, extreme dust, etc. **it is recommended to change bearings after 5 years.**

Warranty

The warranty is based on the legal regulations (warranty law 1999/44/EC) and refers to one working shift under proper working conditions.

The warranty includes the costs of replacing defective or incorrectly assembled pairs, including the time required.

Excluded from the guarantee are parts subject to wear and tear, improper use such as excessive force.

In case of warranty claims, the serial number of the machine must be stated.

Returns must be authorised by the manufacturer prior to collection.

We reserve the right to charge for transport costs if this has not been authorised by the manufacturer.

Technical assistance service

At ELITE we try to satisfy our customers with reliable and easy to use products. However, should you experience any problems while using the machine, please do not hesitate to contact us as soon as possible.

On our website: www.elite.es you have all the possible means of contact, both directly with us and with our authorised distributors, who will assist you, if available in your country, with the best proximity and professionalism.

We wish you many years of enjoyment from this product, please: at the end of its useful life, please dispose of it correctly to the appropriate bodies for its proper disposal and recycling.