SHARPENING OF TUNGSTEN CARBIDE TOOLS

General

Always keep the tool in good cutting condition. Light sharpening is necessary; even if done fairly frequently, it does not represent a waste of time but provides the tool with greater efficiency and maximum safety.
In the absence of a diamond wheel, use a CARBO 120-grain, grade J wheel. Never use a hard wheel that would scratch the carbide and chip the edge.
The CARBO wheel, being designed for grinding carbide, tends to become clogged upon contact with steel. It is preferable to use a CORINDON wheel for grinding the steel support.
Avoid prolonged or excessive pressure on the wheel; proceed with light passes to avoid overheating the cutting edge. Allow to cool in ambient air; never cool in water.
Excessive heating and rapid cooling cause cracking and splitting of the carbide inserts.

Engraving chisels

The cutting edge must be rigorously polished, without any chipping. To perfect it, finish the sharpening on a very fine briquette, a 220 to 400 grain or on a diamond sharpener.
The bit must have a slight ogive, which reinforces the cutting edge (fig. 1).
The angles will be slightly blown with the very fine briquette, to eliminate any sharp part (fig. 2).



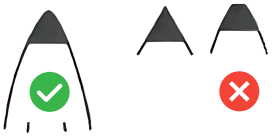
Scribing irons

The angle at the top of 30° will be reinforced by a slight ogive. Use a diamond wheel or a very fine wheel. If necessary, finish the sharpening on a 220 to 400 grain briquette or on a diamond sharpener.



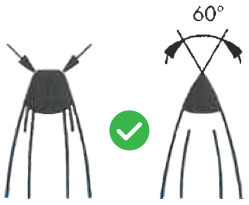
Punches - pointed-end tooth

The pointed-end must form a very regular ogive. Its end must be neither sharp nor flat, but slightly rounded, in the shape of a sphere. It is recommended to perfect the sharpening on a fine briquette, grain 220 to 400.



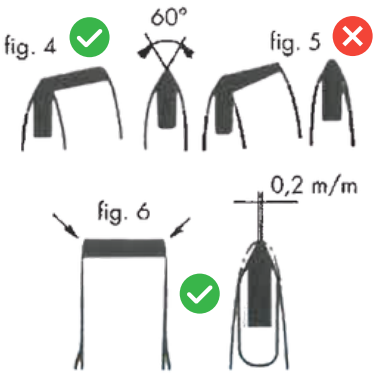
Punches - flat tooth

It is extremely important to observe the ogive shape.
All sharp angles will be carefully trimmed with a fine briquette.
Observe the same general instructions as for the CHOC chisel.



CHOC chisels

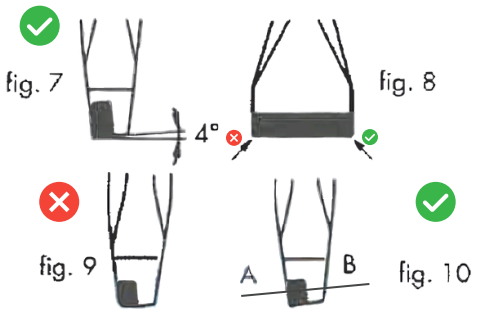
The cutting edge must not show any chipping.
The sharpening in the shape of an ogive (fig. 4) allows to give the cutting a maximum resistance.
The cutting edge must always be on the carbide insert axis, in order to avoid any imbalance. A dissymmetric sharpening (fig. 5) is the cause of breakage.
it is recommended to fold back the sides of the cutting to obtain a reinforcement of the cutting angle (fig. 6).
Excellent results are obtained by leaving a small part of the worn-out cutting during sharpening.
After sharpening, remove any sharp parts that may remain using a sharpener or fine briquette.



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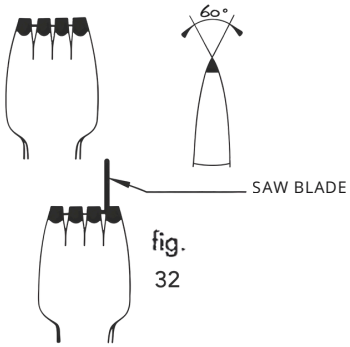
Pitchers

The sharpening of the pitchers will be done only on the lower part of the carbide following a plane AB (fig. 10). Never sharpen the front face. It is recommended not to allow too much rounding to form on the cutting angle (fig. 9), which leads to exaggerated fatigue of the carbide. After the correct sharpening (fig.7), remove well the sharp edges and sharp angles using a fine briquette (fig. 8).



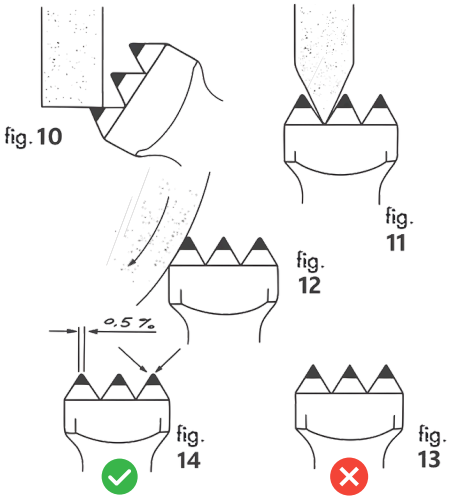
Gradines - flat teeth

The flat-toothed gradine is maintained like a chisel.
It is recommended to grind the cutting into an ogive, in order to strengthen it as much as possible.
As the teeth wear, the steel located between them will be removed using a metal saw (fig. 32).
After sharpening, remove angles and sharp edges using a fine briquette.



Bushing tools

The sharpening of the bushing tool will be carried out either on the corner of a flat wheel (fig. 10) or with a 70° shaped wheel (fig. 11). The outer side of the teeth will be sharpened on a flat wheel (fig. 12).
For this work, we recommend a wheel CARBO grain 60 grado P. It is recommended never to make a sharpener or a pointed-end (fig. 13). Leave part of the old wear on about 0.5 mm. Remove the sharp parts using a thin brick (fig. 14).

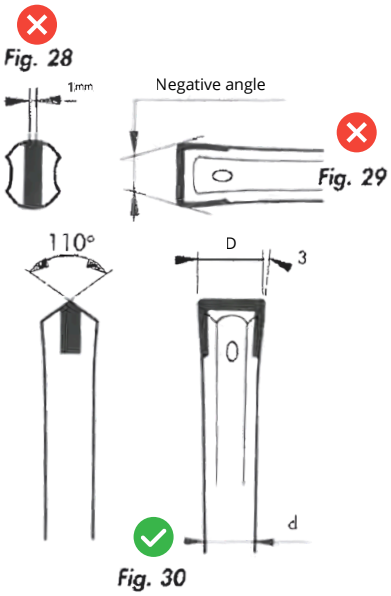


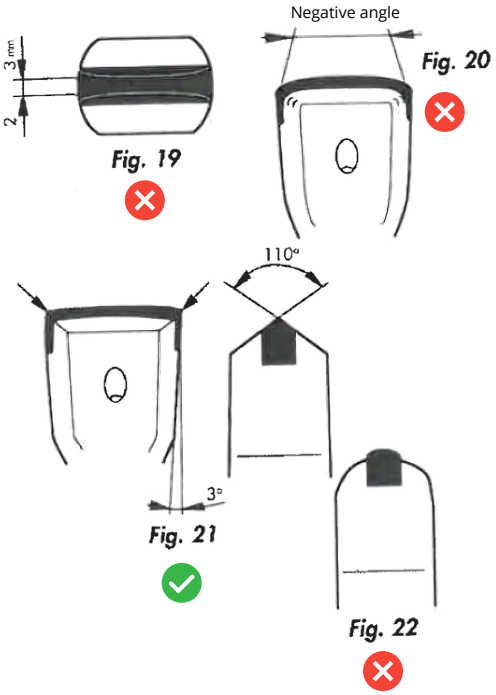
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SHARPENING OF TUNGSTEN CARBIDE TOOLS

Hollow drills

The resharpening of hollow drills must be executed:
1- If the carbide insert has a flat of 1 mm at its ends (fig. 28)
2. If as a result of lateral wear, the cutting has an opposing cone (fig. 29).
Carefully respect the cutting angle of 110°.
Sharpen quite frequently, so as to always keep the diameter D greater than the body diameter (fig. 30).
Eliminate the angles and sharp edges using a thin briquette.



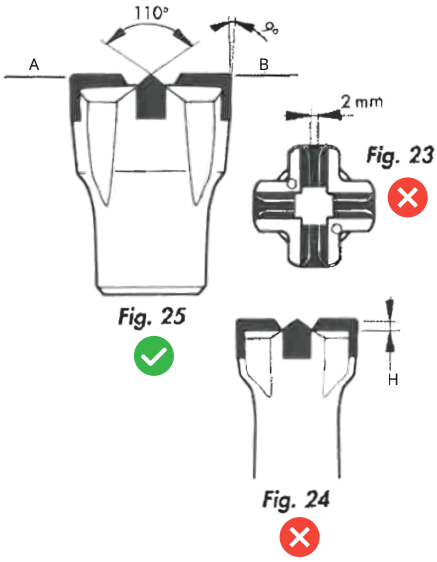


Integral drills

The necessity of sharpening a integral drill cutting is necessitated by the following conditions :
- if the carbide plate has a flat of 2 to 3 mm at its ends (fig. 19)
- if as a result of lateral wear, the cutter presents an opposite cone (fig. 20)
Depending on the diameters, the radius of curvature of the cutting width is 60 or 80 mm. Respect the initial curvature.
Also respect the cutting angle of 110° and the lateral clearance of 3° (fig. 21).
Eliminate angles and sharp edges using a thin briquette.
Too advanced wear on the carbide (fig. 22) leads to the deterioration of the integral drill body, its shank, and causes serious damage to the hammer perforator. When putting the resharpened integral drill back into service, reduce the air pressure during the first few centimetres of perforation before giving full power to the hammer perforator.

4-cutting-edge drill bits

The 4 cutting edges drill bits need to be sharpened:
- when the edge of the plates has a 2 mm flat at the end (fig. 23)
- when the corner of the pads exhibits wear equal to the height H of the cutting edge (fig. 24)
During resharpening, carefully respect the cutting angle of 110°. Respect the clearance of 3°. The cutting edges must remain in the same plane following AB (fig. 25).
It is advisable to use a CARBO grain 80 grade J wheel.
Make sure that the blowing holes are not obstructed by wastes.



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