

Using Vallorbe Gravers and Burins

Vallorbe gravers produced from tool steel (WS) and high speed steel (HSS) possess the necessary hardness and resilience for ideal durability of their cutting edges. If they are carefully sharpened and resharpened with a high quality grinding wheel (for example, an emery wheel with HM hardness and a 50-80 grit size) according to the desired surface sharpness, they will retain their cutting properties for a long time. Intensive moistening is necessary. Note—excessive pressure leads to overheating and therefore to reduced hardness (tempering) in particular in tool steel (WS).

After sharpening, an expert professional prepares the cutting edge and the tip of his graver by polishing the graver on a fine-grained oilstone according to need. The quality of the final result will depend on the quality of the polish. Our tool steel and high speed steel gravers are hardened and subsequently tempered so that they are ready for use; therefore, additional tempering is not required. They are specifically recommended for crimping work because of their resilience and their ability of withstanding impact.

In some instances, gravers must possess different levels of hardness and resilience depending on their application and use. If necessary, users can prepare gravers independently, according to their needs, materials, and modes of working.

For engraving solely with WS gravers, the below indicated levels of hardness are required, which can be obtained by tempering. These are recommended values that must be confirmed by the user depending on his needs with respect to tempering treatments, especially with regard to the means being used for reaching the desired temperatures. Specific attention must be paid to the sharp area of a graver, because temperatures are reached more quickly there than in thicker areas when a flame is being used as a source of heat, for example.

Consequently, it is possible that the hardness that is obtained is lower than the desired level, which in turn could result in premature deterioration of a graver during use. Using a small oven with a regulated temperature is the best way of guaranteeing desired hardness and timing of procedure every time.

Engraved Material	Color + Temperature	Hardness Obtained
Steel (480-980 N/2 mm)	Condition as delivered from Vallorbe	820-930 HV/0.3
White gold, platinum, etc.	Yellow (approximately 220° C.)	700-740 HV/0.3
Gold, silver, brass, bronze, cast metal	Red, purple, violet (approximately 260° C.)	600-650 HV/0.3
Light metals: zinc, tin-lead, light alloys	Blue, clear blue (approximately 300° C.)	540-580 HV/0.3

Comparative indications for colors and treatment temperatures can be obtained from the Swiss watchmaking website www.horlogerie-suisse.com.