

# Diamond and CBN honing stones

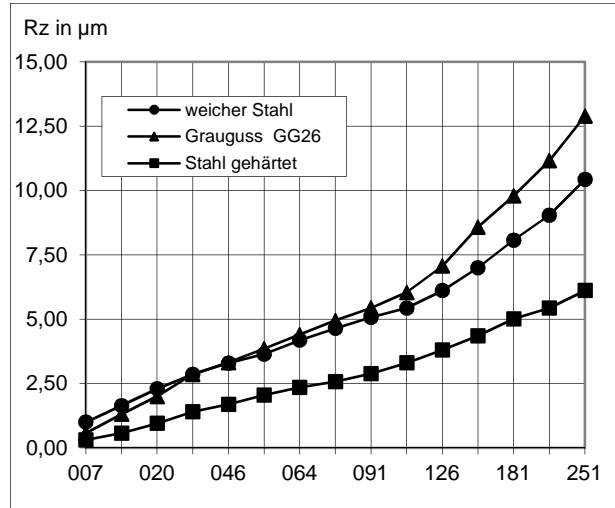
To achieve optimum results during honing, special care and experience must be used in the selection of the cutting material. Our first step is to ask you for all data relevant to the process (e.g., part sketches, material, allowances). Our application engineers then determine the honing stone specification based on the size and type of the abrasive grain, type of metal bond, concentration of the abrasive grain, as well as additional amount of bond matching your requirements.

Continual optimisation by our application engineers afterwards ensures that you can always keep your honing process at the forefront of the technological development.

Our honing stones can be made with grains from D251 to D046 (B251 to B046) according to FEPA and also in fine grains (from D030/B030) with grain sizes to below 2µm average grain size. Our quality assurance guarantees grain size distribution within very tight tolerances. Custom grain sizes above D251 (B251) are available on request.

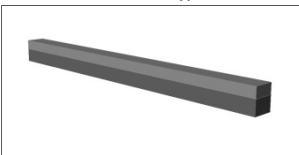
The graph to the right is a reference point for determining the grain size for a specific requirement for the roughness. Large deviations, e.g., by changing the concentration, the use of coolant and other parameters, can occur at times.

The cutting velocity resulting from the cutting grain from circumferential components and axial feed should be between 25-55 m/min for diamond and between 35-75 m/min for CBN. However, cutting velocities must always be optimized in trials.



## Shape of honing stone

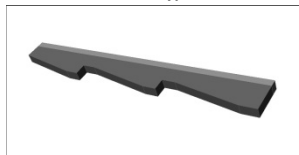
Standard type



The dimensions of our cube-shaped honing stones are specified as LxWxH/A. The standard type is used most frequently, especially for through bores.

Example: 100x4x6/2.5  
L: length in mm  
W: width in mm  
H: height in mm  
A: coating in mm

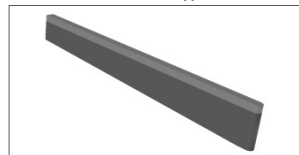
AWS type



Our compact honing stones with one or more inclined steps are specified as LxWxH/A AWS. The AWS type is used mainly for tools for diameters smaller than 12 mm.

Example: 60x2x9.5/2 3AWS10°  
L: length in mm  
W: width in mm  
H: height in mm  
A: coating in mm  
AWS: Number of tapers and their angle in °

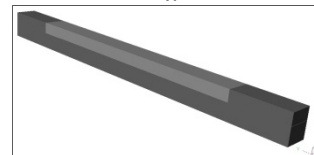
AWS R type



The dimensions of our compact honing stones with a taper and radii are specified as LxWxH/A AWS R. The AWS R type is mainly used for older designs.

Example: 60x2x9.5/2 AWS3° 1R  
L: length in mm  
W: width in mm  
H: height in mm  
A: coating in mm  
AWS: Number of tapers and their angle in °  
R: number of radii (1 or 2)

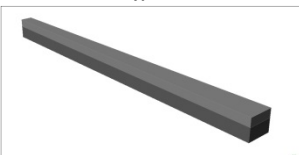
P type



The dimensions of our honing stones with support areas on the ends are specified as (X1-L-X2)/WxH/A.

Example: (10-35-10)x3x4/2  
L: length in mm  
X1/X2: Length of the support areas in mm  
H: height in mm  
A: coating in mm

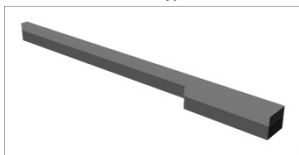
Type SL1



The dimensions of our tapered honing stones are specified as LxW1-W2xH/A. Type SL1 is used especially for blind hole machining with strict requirements for the surface.

Example: 80x5-2x6/2.5  
L: length in mm  
B1-B2: widths in mm  
H: height in mm  
A: coating in mm

SL2 type



The dimensions of our L-shaped widened honing stones are specified as L1/L2xW1/W2xH/A. Type SL2 is used for "free honing" in the blind hole area of a bore.

Example: 80/20x3/5x6/2.5  
L1/L2: lengths in mm  
B1/B2: widths in mm  
H: height in mm  
A: coating in mm

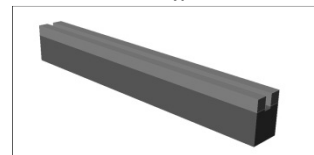
RS type



Our annular shaped honing segments are specified as Da/DixW/A S. Annular segments are used for "free honing" in the blind hole area for heavily stepped holes (e.g., 2-cycle cylinders).

Example: 48/40x5/3 3S  
Da: outside diameter in mm  
Di: inside diameter in mm  
W: segment width in mm  
A: coating in mm  
S: number of segments

NU type



The dimensions of our honing stones with groove are specified as LxWxH/A. NU. Honing stones with groove are used for high material removal with large diameters (SHT / and THT tools).

Example: 75x8x11/2.5 NU2  
L: length in mm  
W: width in mm  
H: height in mm  
A: coating in mm  
NU: groove width in mm