



NEWSLETTER : News from the PAPER / POSTPRESS INDUSTRY

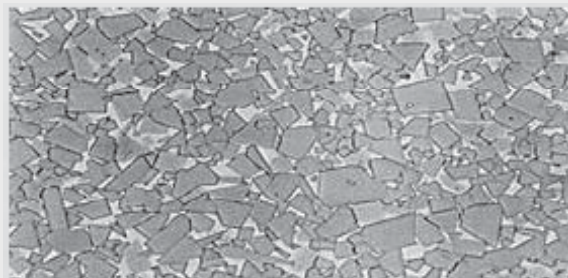
MATERIALS

Premium service lives with finest grain and ultra-fine grain hard metal knives by IKS Klingelberg

Heavy-duty machines in modern postpress lines require **heavy-duty tools**. In this connection, the selection of an **optimum material quality** is decisive.

Most machine knives used for finishing, e.g. cutting of magazines, books, labels, offset plates, banknotes, etc., are made of **hard metal**. Depending on the application, a hard metal knife of a three-knife trimmer can perform in shaving action up to 1,000,000 cuts and that of a high-speed cutter between 40,000 and 60,000 cuts.

Hard metals are sintered carbides that distinguish by extreme hardness and resistance to wear. Hard metal knives are made of **85 - 90 % tungsten carbide (WC)** and **10 to 15 % cobalt (Co)** which is the binding agent. The tungsten carbide grains are of an average size of approx. 0.5 - 1 µm (micrometer). The following applies: The finer the hard metal's grain structure, the higher its hardness and resistance to wear.



Microstructure of hard metal
85 % tungsten carbide (WC), 15 % cobalt

The postpress industry almost exclusively uses wear-resistant hard metals. These are hard metals of medium, fine, finest, and ultra-fine quality.

As a standard, IKS Klingelberg uses the so-called **finest grain hard metal (Incomet Supreme)** and **ultra-fine grain hard metal (Ultra Cut)**.

The names of the material quality classes given by many vendors suggest hard metal qualities of finer structure and higher resistance to wear than they do actually provide.

Ask your knife supplier about the specifications (size of tungsten carbide grains) of the knife quality the supplier delivered so that you become able to compare directly and you will be surprised!

Grain size	English Designation
< 0,2 µm	nano
0,2 - 0,5 µm	ultra fine
0,5 - 0,8 µm	submicron
> 0,8 - 1,3 µm	fine
1,3 - 2,5 µm	medium
2,5 - 6,0 µm	coarse
> 6,0 µm	extra coarse

Gradation of hard metal according to the size of tungsten carbide grains

We will be pleased to give you advice regarding your individual requirements!

Contact

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