Technical Information
Surface Finishes

Steam Tempered

An iron oxide film is created on the tool surface by heat treatment. This improves the adhesion of the coolant and as a result helps to prevent cold welding of the chip to the tool surface.

Nitriding

The surface hardness is increased by enriching the surface of the tap with nitrogen. This results in high abrasion resistance and improved anti-friction properties.

Titanium Nitride Coating

Following PVD processing, the tap undergoes titanium nitride vapourdeposition within the vacuum chamber at approx. 500°C. Excellent anti-friction properties and high resistance to wear and abrasion result from the reduced surface roughness and remarkable hardness. TIN coated taps can be employed using cinsiderably faster cutting speeds.

TiCN (Titanium CarboNitride Coating)

The TiCN-coating is particularly suitable for wear-resistant and abrasive material. The TiCN-coating has an hardness of 3.000 HV and thus is harder as the TiN-coating (2.600 HV). As a result the TiCN-coating has an excellent wear-resistance. Also the hardness and the toughness is higher, the heat resistance is reduced. Therefore intensive and optimum cooling is essential.

Each VÖLKEL Tap and each VÖLKEL Die can be supplied with any coating or surface finish quickly.