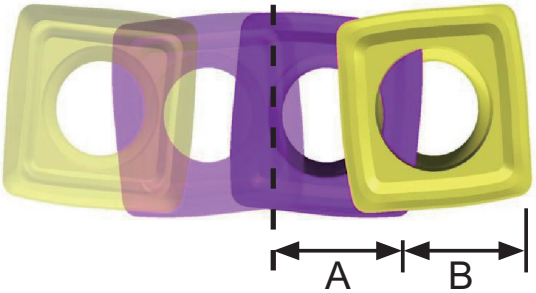
MVX - High performance indexable insert drill

Smart thinking has lead to simple solutions for some old problems associated with indexable insert drilling. Difficulties such as chip clogging on deep holes, dissimilar rates of wear on inner and outer inserts due to differing peripheral speeds, plus flexing and wear of the drill body itself have all been resolved with a new and innovative design.

Different grades for inner and outer inserts

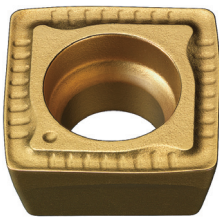
The outer insert in this type of drill naturally runs at a higher speed than the inner, thereby leading to higher levels of wear. Consequently the inner insert needs to have a higher level of stability and resistance to fracturing at lower speeds. This anomaly has been negated by using a CVD coated outer insert that has higher abrasion resistance, in tandem with a PVD coated inner insert that can cope better with fracturing forces and resistance to welding. This combination means improved reliability and fewer changes of insert for increased levels of productivity.

Up to 6 x D



Optimisation of the cutting ratio A & B spreads the cutting load evenly and helps prevent deformation of the tool body and reduce vibration.

Outer CVD coated insert



Inner PVD coated insert

Interchangeable inserts with 4 cutting edges

The SOMX type inserts are interchangeable from inner to outer position, have 4 cutting edges and a unique wavy chipbreaker design for improved chip control. The peripheral edge also has a wiper type geometry for excellent hole wall accuracy and surface finishes. The inserts are also positioned in such a way that when cutting, they are both equally in contact with the workpiece, thereby reducing drill body flex to provide a more consistent performance.

Insert grades for steels, stainless steels and cast iron.

A new CVD coated grade MC1020, is suitable for placing on the outer cutting edge. It displays high wear and plastic deformation resistance, allowing it to be effective when used for machining steels and stainless steels.

For cast iron drilling, a different CVD grade, MC5020 is used for the outer insert. Excellent abrasion and thermal cracking resistance makes it ideal for cast and nodular cast irons.

The inner insert uses a VP15TF grade, with a PVD coating based on the famous Miracle type. VP15TF has a broad spectrum of desirable properties such as a micro grain substrate for strength and an excellent resistance to chip welding. These all round properties also allow it to be used as a replacement of the outer insert when conditions become unsuitable for a CVD coated insert.

Tool body

The tool body is designed with through coolant holes and an optimum sweep of the flutes that provides extra metal thickness behind the direction of the principal cutting force. This controls tool body deflection and helps to achieve reliable deep hole drilling up to 6 x D. Additionally the body surface is heat treated to prevent wear from chip evacuation. The sizes available are Ø17mm-Ø33mm and in L/D=2, 3, 4, 5 and up to L/D=6.

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