

DSAS DRILL FOR MACHINING HRSA

These special purpose drills have been designed from the outset specifically for drilling of HRSA materials. Several important performance targets were set to be achieved before they were launched. The most important of these targets was tool life and reliability. To achieve this target, several features were built into the geometry, substrate and coating of the DSAS drills.

Optimum Cutting Edge Design

A tried and trusted straight type cutting edge is utilised because this provides an even cutting load spread, as well as the required toughness needed for machining HRSA materials. This geometry together with a dedicated edge honing provides the drill with high resistance to edge chipping and breaks chips efficiently and allows easy ejection that prevents jamming of the flutes. Additionally, the sharpness of the edge geometry was found to produce a lower thrust force than conventional drills when machining titanium.

Special Margin

The margin has been made thinner than used on conventional drills. This thinning provides the benefit of reduced cutting loads and much reduced level of work hardening of the hole wall surface. When drilling Inconel 718 the hole roundness and the surface roughness of the hole wall were found to be superior when compared to conventional products.

Through Coolant

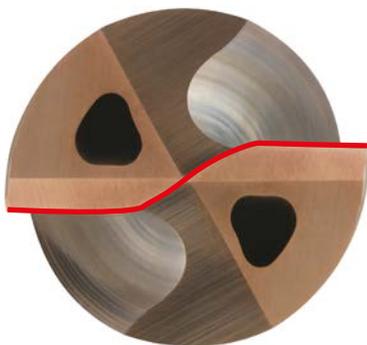
An essential feature of drills for difficult to cut materials is the efficient supply of coolant delivered to the cutting edge. The direct through coolant hole feature provided on all DSAS drills means that essential cooling and lubricity at the cutting edge can be provided. Furthermore, a sufficient supply of coolant also greatly aids chip evacuation.



Substrate and Coating

To complement all the advanced geometrical features, a brand new carbide grade, DP9020 was developed to optimise the overall performance and reliability of the DSAS series. A substrate with a balance of hardness and toughness was developed and a suitable PVD coating added to provide wear resistance to the substrate's natural fracture resistance.

The DSAS series brings not just performance but the overall drilling package of hole accuracy, reduced work hardened layer and surface finish, repeatability as well as the all important process reliability. The drills are available in 64 different sizes ranging from Ø3 - Ø12.



..... STRAIGHT CUTTING EDGE WITH DEDICATED HONING

SPECIAL THIN MARGIN

