

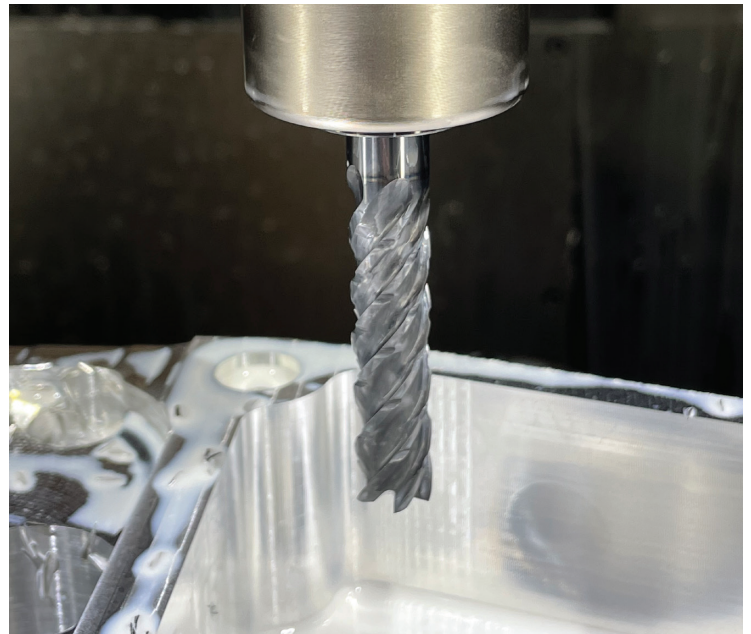
NEW 5 FLUTE CHIPBREAKER END MILLS

VQ, the top of the range series of carbide end mills from Mitsubishi Materials has recently been expanded to include a new innovative type. The latest addition, the VQ-CS range, includes medium and long cut length types named VQJCS and VQLCS, have been designed for specialised roughing applications on heat resistant super alloys. They can also perform effectively on hardened stainless steels and can even be used on more materials such as copper and copper alloys as well as carbon and alloy steels.

The main features of the new end mills are the special flutes that have notches to provide an effective chip breaking function. The 5 flutes used on each diameter also displays a rigid cross sectional geometry to provide excellent chip evacuation, this makes the VQCS end mills ideal for trochoidal machining. Furthermore, the irregular pitch of the flutes and micro clearance angle of the peripheral cutting edge provides excellent vibration damping properties for stability and reliability. The extensive range of special features is concluded with a unique end cutting edge geometry that achieves high chipping resistance.

The latest coating and ZERO- μ Surface

The majority of the reliability and high performance of the VQ series can be attributed to the newly developed (Al,Cr)N group based coating which delivers substantially improved wear resistance over conventional coatings. The extreme heat and oxidation resistance and lower coefficient

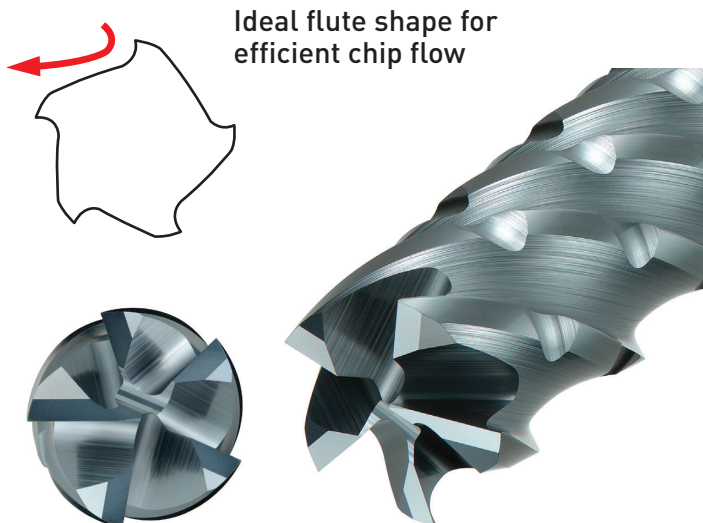


of friction of the new coating means this next generation of end mills can maximise performance and help prevent tool wear even under the harshest of cutting conditions such as when machining stainless steels and difficult-to-cut materials. Additionally, the surface of the coating has been given a smoothing treatment resulting in better machined surfaces, reduced cutting resistance and an increased chip discharge capacity. With conventional coatings the sharpness of the cutting edge can be affected, but with the unique ZERO- μ Surface, the cutting edge retains its sharpness whilst remaining protective during harsh machining conditions.

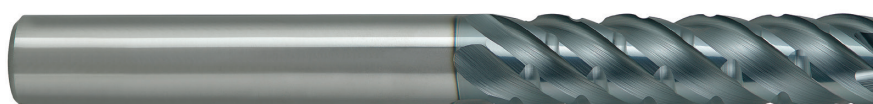
Availability

The new 5 flute types join the existing VQ family and are available in medium and long effective cut lengths:

VQJCS - (LF) $\varnothing 6$ length 70, $\varnothing 8$ length 80
 $\varnothing 10$ length 90, $\varnothing 12$ length 100
 $\varnothing 16$ length 110, $\varnothing 20$ length 125
 VQLCS - (LF) $\varnothing 6$ length 70, $\varnothing 8$ length 90
 $\varnothing 10$ length 100, $\varnothing 12$ length 110



VQJCS



VQLCS