

## VQT5 - NEW 5 FLUTE THROUGH COOLANT END MILLS

VQ, the top of the range series of end mills from Mitsubishi Materials has been further expanded to include a new 5 flute type for machining titanium alloy. This latest addition has been specially designed for deep shoulder and deep full slot milling up to 2 x D.

The ability to perform deep slotting and shoulder milling is made possible due to the optimisation of the irregular 5 flute geometry. This provides resistance to chatter and vibration as well as being the ideal shape for improved chip disposal. In addition, the seamless blending of the corner radius with the peripheral flute suppresses abnormal wear and provides process stability even at larger depths of cut. The centre through coolant hole ensures ample cutting fluid is supplied to the cutting edges. This is a vitally important feature that helps to increase machining efficiency by discharging the large volumes of chips generated at the high depths of cut that this range of end mills have been designed for. Further efficiencies can be realised by using optimum cutting parameters and tool path programming to produce metal removal rates of up to 250cm<sup>3</sup> per minute in titanium alloy.

### Coating

VQ solid carbide end mills have been treated with an innovative (Al, Cr)N group MIRACLE SIGMA based coating which delivers substantially improved wear resistance. 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. 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 when machining difficult to cut materials.

### ZERO- $\mu$ Surface

With the unique ZERO- $\mu$  Surface, the cutting edge retains its sharpness. While previous technologies often resulted in diminished sharpness, the ZERO- $\mu$  Surface achieves both smoothness and sharpness, as well as longer tool life.

### VQT5MVRB sizes

Three sizes are available,  $\varnothing$ 16, 20 and 25 mm with corner radii of 3 and 4 mm respectively. Different corner radii can be ground as a special made to order item.

### Centre Through Coolant Hole

Ample coolant supply ensures efficient chip discharge

