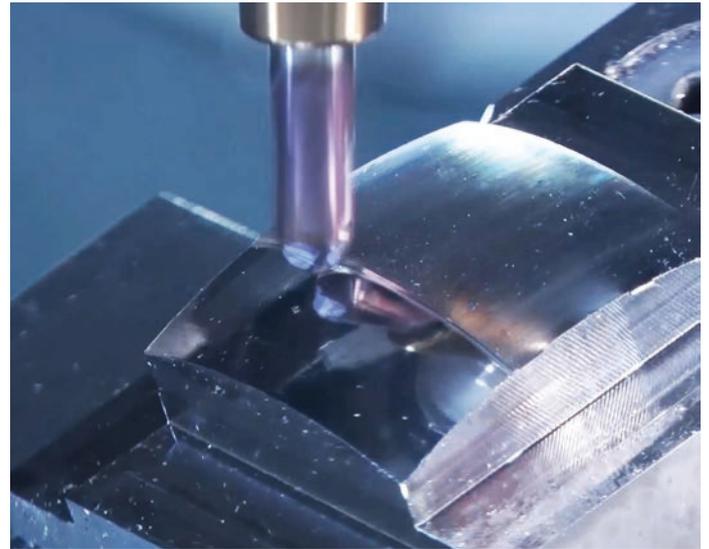


VFR END MILLS FOR HARD MATERIALS

When it comes to the machining of hardened steel, Mitsubishi Materials already has a reputation that places the cutting tool manufacturer as the industry benchmark. Further cementing this market position, the company has now launched its new VFR Series of ball nosed end mills.

Capable of machining extremely hard materials up to 70HRC, this next generation of end mills are manufactured from an ultra-micro grain carbide substrate that has an (AlTiSi)N sub-layer coating that enhances wear resistance and improves adhesion strength for significantly improved tool life. Added to the sub-layer is Mitsubishi's newly developed AlCrSiN multi-layered PVD coating. This innovative new layer technology offers unsurpassed oxidation resistance, improved lubricity and higher wear resistance. The result is tool life performance that extends machine utilisation whilst providing customers with the confidence to run unmanned machining on the hardest materials for periods that far exceed that of competitor products.

Branded as part of Mitsubishi's 'Impact Miracle



IMPACT MIRACLE REVOLUTION

Revolution' line that is suitable for machining hard materials from 50 to 70HRC, the new VFR Series gives end users a particularly wide application range for hard material machining. This makes the new VFR Series of ball nosed end mills the tool of choice for everything from rough to finish machining of hard materials. The VFR Series is available in two variants, the VFR2SBF for fine finish and mirror finish machining and the VFR2SB for rough, semi-finishing and finishing applications.

The VFR2SBF finishing tool incorporates Mitsubishi's Zero- μ surface technology and a unique radius geometry that demonstrates impressive centre cutting credentials whilst the polished 30 degree flute helix rapidly evacuates swarf. The two flute finishing ball nose has a short cut length for maximum rigidity that optimises performance when cutting carbon steel, alloy steel, pre-hardened steel and hardened steels. The finishing tool is available with a straight shank variant or a tapered shank for maximising access to difficult to reach geometries. The VFR2SBF is offered in diameters of 1 mm through to 6 mm diameters.

The more flexible VFR2SB series for high precision pre-finishing and finish machining is available with four shank variants to suit the exact needs of the end user. This impressive new all-rounder is available in diameters from 0.2mm through to 20mm with a cut length from 0.2 to 38mm. The straight and tapered shank options have been designed to maximise reach, rigidity, reduce vibration and optimise surface finishes and tool life under high speed and feed machining of extremely difficult to cut materials.

