

VFX SERIES - NEW ADVANCED MP9130 GRADE FOR TITANIUM ALLOYS

Mitsubishi's recognised approach to milling titanium alloys with its VFX 5 and 6 series of cutters has gained momentum since its introduction to the market. The original design was focused on combining a cutter body with its own beneficial features of overall rigidity, robust design and through coolant facility that complemented the geometry of the unique V formed inserts. This overall approach meant that outstanding metal removal rates of up to 500cm³ / min was achieved in real life applications whilst maintaining an acceptable tool life.

New Insert grade

The VFX series now has a new advanced grade, MP9130, to add extra performance and reliability. MP9130 is made from an enhanced super-fine cemented carbide substrate for increased toughness that also retains hardness for longer tool life. The latest technology using Al-Ti-Cr-N accumulated coating method ensures the optimum wear and heat resistance. The combination of these properties provides excellent fracture resistance and a very low coefficient of friction for class leading welding resistance necessary for the successful machining of modern titanium alloys.

The cutting edge geometry features a multi-stage convex rake face to ensure a smooth but strong cutting action and aims to emulate a solid type carbide end mill, therefore achieving a higher than normal standard of wall finish. Such a strong cutting action means the insert needs to be anchored securely. For the VFX6 type, this is done with a larger than normal TS450 screw that can be tightened to a recommended torque of 5.0Nm to make the most of the double V-formation and large face pocket clamping area.

Insert Pocket

The insert pockets have been designed with a large axial contact face and double shallow V formation with radial contact points to ensure overall clamping strength, high repeatability of insert positioning and for optimal dispersion of loads.



Cutter bodies

The VFX cutter bodies are manufactured from 42 CrMo4 steel, chosen for structural rigidity and integrity even when subjected to high loads and temperatures. The bodies also have an innovative system of internal coolant holes with exit nozzles of changeable diameter. These can be exchanged according to the coolant pressure available and the required level of chip dispersion.

The latest 3 flute bodies are ideal for high chip volume applications such as slotting due to the maximised main flutes and chip pockets. When used in conjunction with the LS chipbreaker the performance benefits can be maximised.

Availability

The VFX5 cutters are available in sizes from Ø40 - Ø80 mm and the larger VFX6 series is available from Ø63 - Ø100 mm.

VFX5 inserts - MP9130 grade

MS chipbreaker style with corner radii R0.8 - R4.0 mm
HS / LS chipbreaker R0.8 mm corner radius

VFX6 inserts MP9130 grade

MS chipbreaker style with corner radii R1.2 - R5.0 mm
HS / LS chipbreaker R1.2 mm corner radius

