

## TOUGH and MULTI - NEW VPX 200 & 300 INDEXABLE TANGENTIAL INSERT CUTTER SERIES

Mitsubishi Materials extensive high performance, indexable insert milling cutter range has been expanded to include a brand new type - VPX.

### Tough

The modern metal cutting industry demands multi-functionality and overall toughness in new indexable milling cutters. These demands led Mitsubishi's design team to pursue the tough machining characteristics of a tangential type cutter. Arranging inserts tangentially allows the core of the cutter body to be larger than in a conventional, radially mounted type. This adds overall rigidity and permits higher cutting loads to be subjected without creating excessive tool deflection. Consequently, higher levels of feed and speed can be realised so end users benefit by being able to use the tools' multi functionality on differing small job batches without changing tools and also utilise ever more efficient machining strategies on longer, unmanned, high volume production runs.

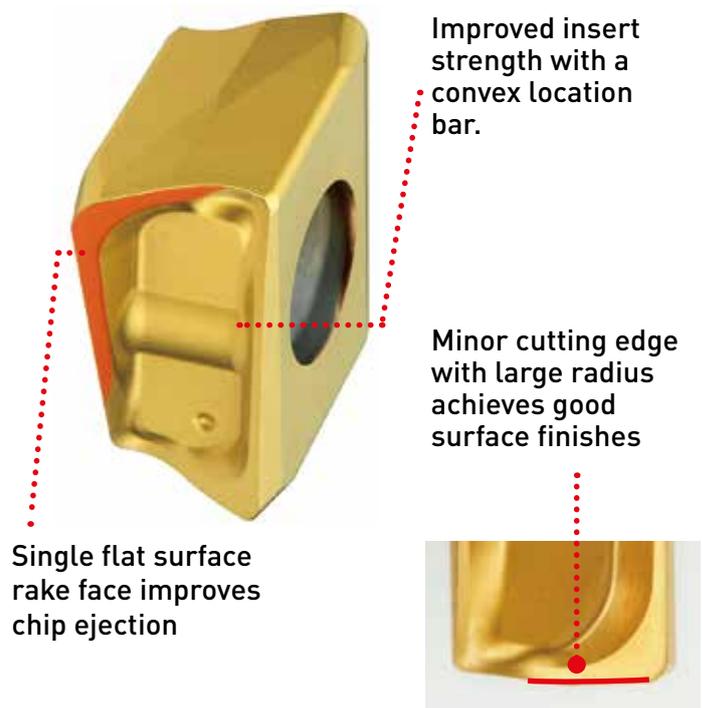
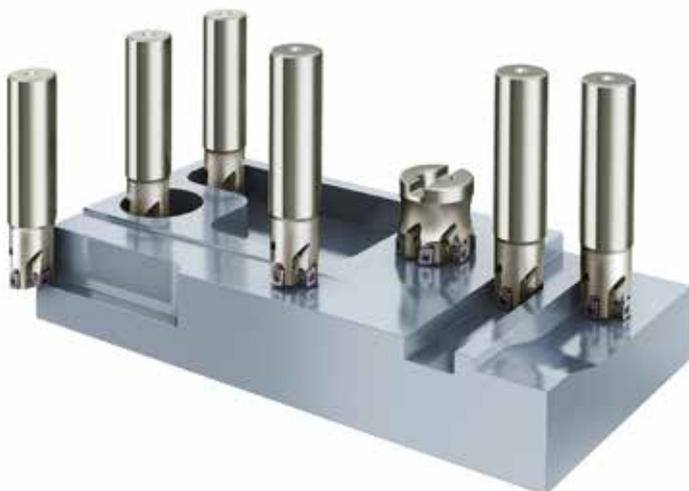
### Multi-functional

VPX has the ability to be used over an extremely wide range of milling functions, ranging from standard shoulder milling through to ramping and pocketing. This multi-functionality was a key factor in the original design parameters, together with the knowledge that today's customers require both high performance and optimum usability to reduce cutting tool inventories.



### Tangential double sided inserts

The insert geometry provides the required toughness together with the ability of multi-functionality. Most tangential insert cutters require the use of a dedicated insert for ramping applications, but the innovative top edge geometry of the insert used on VPX means that only 1 type is needed for all machining methods. This reduces stock of inserts for end users and also prevents potential costly installation mistakes. Importantly, the inserts are double sided and therefore provide the essential element of economy.



A single flat rake face on the insert improves chip disposal and provides accurate wall face step overs with a cusp height of only 8µm when deep wall machining. Additionally, the minor cutting edge that blends smoothly into a large corner radius, also provides a benefit by providing the ability to achieve good component surface finishes. The top face geometry combines the minor cutting edge and a relief angle that makes ramping possible.



### Designed for security and accuracy

Both the cutter body and insert have large contact areas on 3 faces for secure and stable clamping. This suppresses any deflection of the insert caused by the loads during machining. An additional convex location bar on the insert further adds strength, rigidity and security of location.

### Insert grades and coatings

8 different types, including the latest MP6100, MP7100 and MP9100 series of grades are offered to cover machining of materials from carbon, stainless and hardened steels through to cast iron and difficult-to-cut materials. A fusion of Mitsubishi's TOUGH SIGMA coating technologies, both PVD and CVD, provide state of the art protection for the carbide substrates.

VPX 200 and 300 series cutters are available in 2 different sizes to accommodate both large and



smaller machines. The 200 series has 09 size inserts, whilst the 300 has larger 12 size inserts and both series are available in shank, screw-in and arbor types, ranging from Ø16 - Ø80.

## MP6100/MP7100/MP9100 SERIES INSERTS

### TOUGH-Σ Technology

A fusion of different coating technologies; PVD and multi-layering provides extra toughness

<b>P</b>		(Al,Cr)N Resistant to thermal cracking
<b>M</b>		TiN For resistance against notching
<b>S</b>		CrN Resistance to chipping