

## NEW MC5100 INSERT SERIES FOR CAST IRON

For high performance turning of cast iron, Mitsubishi Materials has launched the MC5100 series, a brand new range of 3 different insert grades that are optimal for each type of cast iron machining application.

The series also introduces an innovative new SUB-Grip layer that ensures a highly effective adhesion of the base TiCN coating layer to the carbide substrate. This development increases the resistance to peeling even during strong intermittent cutting when the forces exerted on the insert are at the highest level. SUB-Grip is employed to create the maximum benefit on the grades for medium speed machining (MC5115) and interrupted cutting (MC5125).

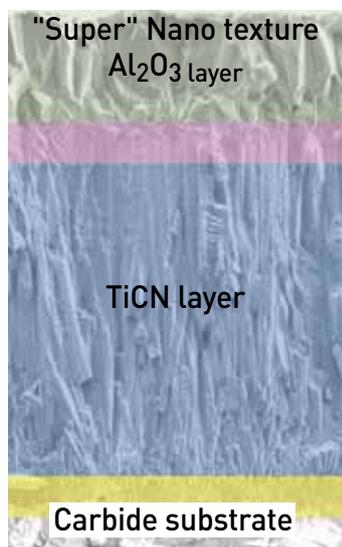
### MC5105

Designed for high speed cutting of grey cast iron (500 - 1000 m/min), it is a harder grade with outstanding wear resistance. To achieve this, an ultra thick top coating layer of Super Nano Al<sub>2</sub>O<sub>3</sub>, that is twice the thickness of conventional coatings is utilised. This combines with a TiCN layer that is bound by Mitsubishi's patented "Super Tough Grip Technology". This combination produces an overall result that prevents peeling and eliminates edge chipping that often occurs with conventional grades. Working in tandem with an enhanced carbide substrate, the result is significantly improved tool life and component surface finishes, together with greater process reliability and reduced tooling costs.

### MC5115

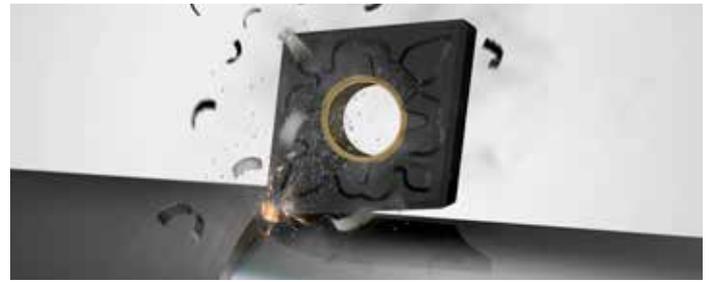
This grade is ideal for ductile cast iron and displays excellent durability due to its resistance to impacts. MC5115 features the new Sub-Grip adhesion layer that effectively binds the carbide substrate to the thick TiCN layer above, thereby providing both resistance to peeling and the ability to cope with the hardness of ductile cast iron. This feature packed grade also has the proven TOUGH-Grip layer binding the Super Nano texture Al<sub>2</sub>O<sub>3</sub> top coating layer to the thick TiCN layer below.

#### MC5100 coating structure



TOUGH-GRIP layer. The interface between the layers is controlled at the nano level, enabling extremely high levels of adhesion to prevent delamination.

SUB-GRIP layer. Greatly increases the level of adhesion between the carbide substrate and the coating layer. It has been developed to increase resistant to peeling even during strong intermittent machining.



### MC5125

The ideal grade for heavy and interrupted cutting of ductile cast iron. Featuring all the same benefits of the coating layers as the MC5115 grade but with an optimised, less thick TiCN layer.

### Chipbreakers - LK, MA, MK, RK, GK and flat top

The MC5100 series also boasts several chipbreakers to ensure peak performance can be achieved across a huge range of cast iron turning applications. This is easily done by matching the correct grade with the ideal chipbreaker using a simple cross reference chart. The chipbreakers range from the LK and MA breakers with a positive land for lower cutting resistance, the MK type for a balance between sharpness and edge strength, through to the RK, GK and flat top types with stronger geometries for interrupted heavy cutting and for the removal of scale on the surface of the cast iron material.

### Comprehensive choice of insert geometries

The usability over a wide application range is enhanced with the availability of CNMG/A to WNMG/A negative rake inserts and CCMT and DCMT positive rake inserts.

