

BC8110 COATED CBN GRADE – NEW GENERATION COATING TECHNOLOGY

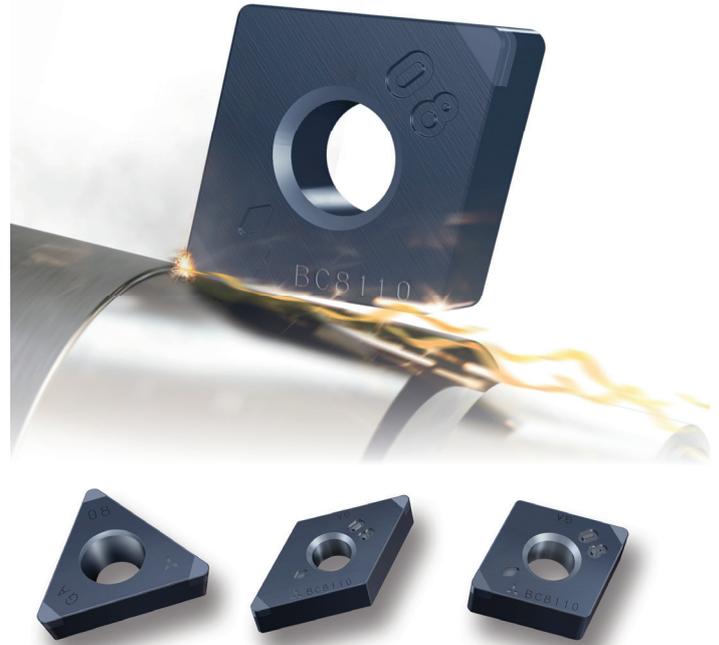
Hardened Steel Turning

For the efficient turning of high hardened steel, Mitsubishi Materials has now developed an innovative new coated CBN insert grade, BC8110. It incorporates the company's next generation coating technology that provides outstanding wear resistance and improves productivity. The new BC8110 extends Mitsubishi's turning line by providing customers with a grade that has been launched for wet or dry continuous turning at depths of cut in the region of 0.2mm at cutting speeds up to 300m/min. By adding the BC8110 to its range for machining hardened steel, the new grade compliments the existing BC8020 grade for high load continuous cutting and light interrupted turning operations.

Coating Technology

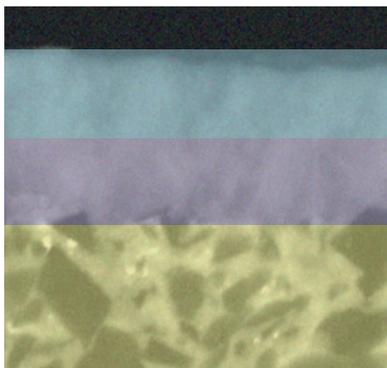
The new line of inserts delivers a variety of performance and benefits through tireless R&D work. This work has created a composition that incorporates a new CBN sintered substrate with an ultra micro-particle binder. This new binding technology in the substrate is unique in the market and prevents sudden fracture by eliminating the potential for linear crack development. With the cutting forces being dispersed radially by this new binder formula, BC8110 excels when machining extremely hard steels.

The coating layers include a TiAlN coating that improves adhesion between the base layer and the CBN surface whilst generating exceptional peeling resistance. Under



this layer is Mitsubishi's new TiAlSiN coating that further enhances wear and chipping resistance. The very top layer is a newly developed ceramic coating that provides outstanding welding resistance and completes a remarkably resilient combination of layers. This exciting combination has proven to improve flank wear by over 50% when compared to conventional CBN coated grades. Furthermore, the BC8110 has proven to retain excellent surface finishes for extended periods when measured against leading conventional inserts. Whilst prolonging high quality surface finishes for extended periods, the new grade also improves tool life by over 30% with its outstanding chipping resistance. The result is a consistently high performance for the end user.

Newly developed ceramic coating



Improved Welding Resistance

TiAlSiN Coating

TiAlN Coating

CBN sintered body
 "Ultra Micro-particle Binder"

Availability

To extend the potential of this new grade, Mitsubishi has launched an extensive range of inserts. This includes negative geometry 80 degree CNGA inserts with two or four cutting edges and CNGM inserts with two cutting edges as well as 55 degree two edge DNGA and DNMA insert geometries. Triangular inserts are catered for with the TNGA, WNGA, TCGW and TPGB geometries with either 3 or 6 cutting edges. The range is completed with the addition of VNGA, VBGW, CCGT, CCGW, DCGW, DCGT and CPGB geometries. All of these geometries work with existing turning tool holders from the comprehensive Mitsubishi turning range.