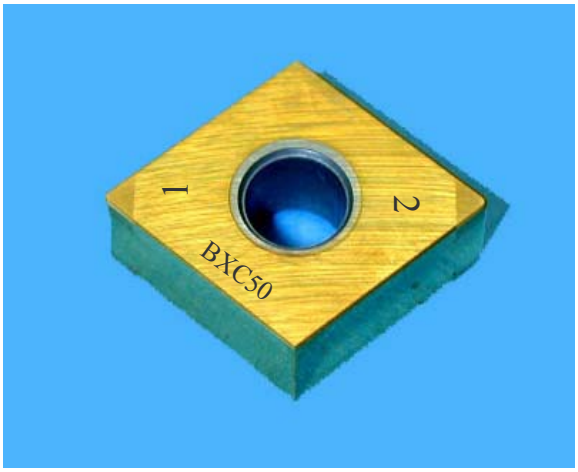
Date: December 6, 2002

H.O.T. PRODUCT MEMO # 030-W

BXC50 Coated CBN Inserts for Hard Turning



TURNING

Product category: H.O.T. product

Application Area: Finish turning of hardened steel both through hardened and case hardened. BXC50 coated CBN is **best** used in CNC type lathes where speed and feed are more consistent and where material hardness is above 50 Rc.

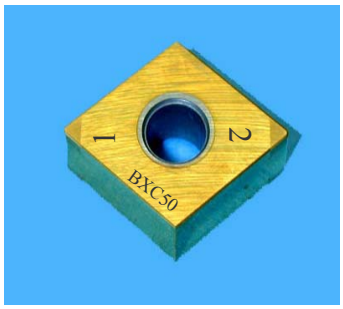
Features and Benefits:

- BXC50 utilizes Tungaloy's ***premium TiN/TiCN*** coating on a very tough type CBN substrate to drastically improve wear resistance and extend tool life.
- BXC50 uses Tungaloy's ***new direct brazing technique*** for higher heat resistance and higher strength.
- BXC50 is multi-cornered and doubled sided for excellent per tip cost.
- BXC50 inserts are stamped with corner numbers for easy identification of used edges.
- Tungaloy produces its own CBN material and coating technology, therefore the quality is controlled by Tungaloy, and only Tungaloy.

Product Strengths:

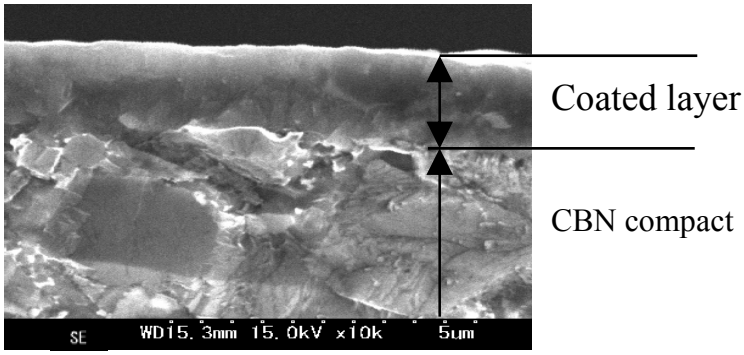
- BXC50 is the best of both worlds with a tough substrate and a PVD coating layer for wear resistance.
- BXC50 is shows excellent performance in both heavy interrupted and continuous hard turning.
- BXC50 can also produce excellent surface finish as low as 8 µin.
- The Tungaloy coating adhesion strength is among the best in the industry.
- Tungaloy brazing technology is among the most advanced that our industry.
- Per edge cost of BXC50 is very competitive, or better than, single or two edged designs.

Technical data:



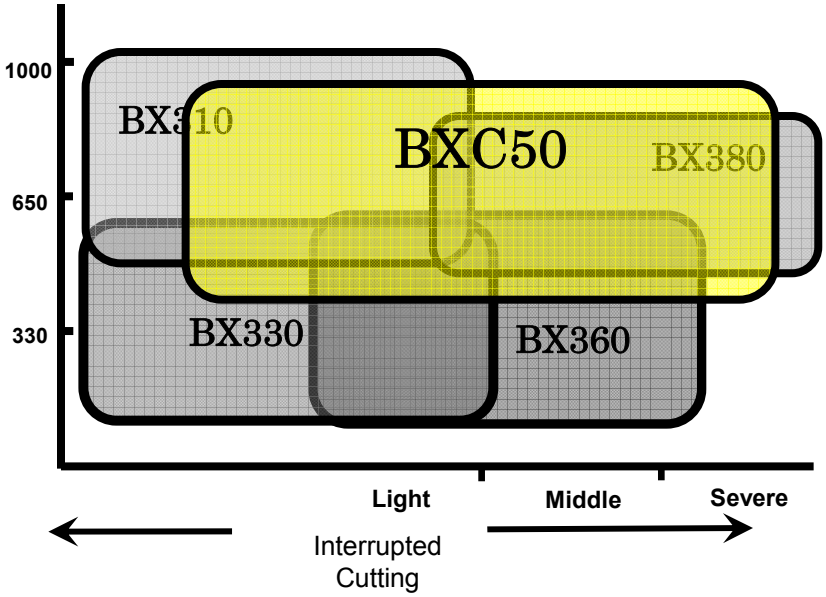
Material properties of BXC50

- **Substrate**
  Special high toughness CBN compact
  Special surface treatment for PVD coating
- **New Special High Temperature Brazing.**
- **Coated layer**
  Multi layers
- Average layer thickness 2µm



Microstructure of BXC50

- **Application area:**



Application example:

- A down hole drilling manufacturer in Dallas as a bearing surface of a drilling head arm that required very tight tolerances and critical surface finish. The material was special alloyed steel welded (58~62 Hrc). We had to hold a Ra surface finish of **8~12 µin**. The existing tools were CNGA432 competitors ceramic inserts. The process was to take a total of four passes of .0015~.007" at a feed rate of .0015~ .003 ipr, and 300 sfm. Four passes were required in ordered to achieve the required finish. Total cycle time was 10 min. and the insert was changed every part. BXC50 was applied at 350 sfm and .002 ipr, and we were able to remove a pass. Total cycle time with BXC50 was reduced to 6 min. and tool life increased to up to 6 pieces while achieving a Ra finish of 10.3µin.

- **CALL US TOLL FREE AT 888-554-8394 FOR MORE INFORMATION**