

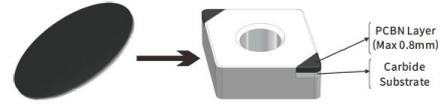
# PCBN INSERTS

Grade and Applicable Industry

## SOLID CBN INSERTS



## CBN TIP BRAZED INSERTS



Series	Grade	Workpiece Material	Machining Condition	Machining Model	Wear Resistance	Impact Resistance	Applicable Industry
Solid CBN	BS7203	• Gray cast iron • High-hard alloy cast iron	Continuous to interrupted	Roughing /Semi-finishing /Finishing	*****	****	Brake disc, Brake drum, Flywheel, Belt pulley, Roll
	BS7204	• Gray cast iron • High-hard alloy cast iron • High manganese steel	Continuous to interrupted	Roughing /Semi-finishing	****	*****	Brake disc, Brake drum, Roll, Belt pulley, Rolling mortar wall
	BS7505	• Gray cast iron • Alloy cast iron	Continuous to heavy interrupted	Roughing /Semi-finishing /Finishing	****	****	Cylinder block, Cylinder head, Cylinder liner, Air-conditioning compressors
	BS7204	• Gray cast iron	Continuous	Roughing /Semi-finishing /Finishing	****	***	Roll, Brake disc, Brake drum, Flywheel, Air-conditioning compressors
CBN Tip Brazed Insert	BN7210F	• Gray cast iron • Powder metallurgy	Continuous to interrupted	Finishing	*****	***	Brake disc, Gear, Sprocket wheel
	BP4410	• Hardened steel	Continuous	Finishing	****	***	Bearing gear, Hub unit

## Recommended Cutting Parameters

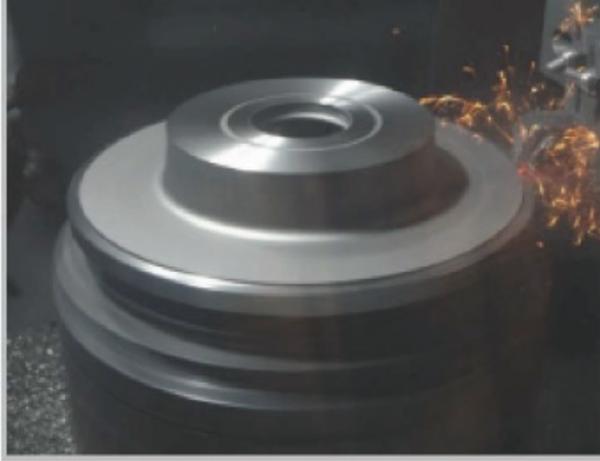
Workpiece	Material	Hardness	Cutting speed Vc (m/min)	Cutting depth Ap (mm)	Feed rate f (mm/r)	Insert Type
Gear	20CrMnTi	58-65HRC	100-320	0.1-0.5	0.05-0.2	Cbn Tip Brazed Insert
Bearing	Gcr15	55-65HRC	100-220	0.1-0.5	0.05-0.2	Cbn Tip Brazed Insert / Solid CBN
Large gear	40CrMo	310-360HB	40-120	0.5-5.0	0.2-1.0	Solid CBN
Large gear	18CrNiMo	58-62HRC	60-120	0-3.1	0.1-0.3	Solid CBN
Slewing bearing	42CrMo	55-62HRC	80-220	0.2-2.0	0.1-0.5	Solid CBN
Brake disc	GG25	180-260HB	500-1200	0.2-2.0	0.1-0.4	Solid CBN
Brake disc	GG25	180-260HB	400-1000	0.5-3	0.1-0.4	Solid CBN
Brake drum	GG25	220-260HB	350-1200	0.2-0.5	0.1-0.4	Solid CBN
Brake drum	GG25	220-260HB	280-1200	0.5-3	0.1-0.4	Solid CBN
Compressor bearing	-	-	500-1200	0.3-2.5	0.2-0.4	Solid CBN
Cylinder liner	Boron copper cast iron	180-260HB	500-800	0.1-0.6	0.1-0.2	Solid CBN / Cbn Tip Brazed Insert
Cylinder liner	-	180-260HB	150-500	0.1-1.0	0.1-0.3	Solid CBN / Cbn Tip Brazed Insert
Roll	High nickel chromium iron	78HSD	30-50	1.0-8.0	-	Solid CBN
Roll	High chromium iron	75HSD	30-45	1.0-10.0	-	Solid CBN
Roll	High chromium steel	75HSD	35-50	1.0-10.0	-	Solid CBN
Roll	High speed steel	88HSD	30-60	0.3-3.0	0.5-1.5	Solid CBN
Roll	High carbon semi-steel	70HSD	45-80	1.0-10.0	-	Solid CBN
Roll	Chilled cast iron	67HSD	40-60	1.0-10.0	-	Solid CBN
Slurry pump	Wear resistance white cast iron	500-600HRC	50-100	0.5-4	0.2-0.5	Solid CBN
Rolling mortar wall	High manganese steel	300-500HB	80-200	0.5-8	0.2-0.5	Solid CBN

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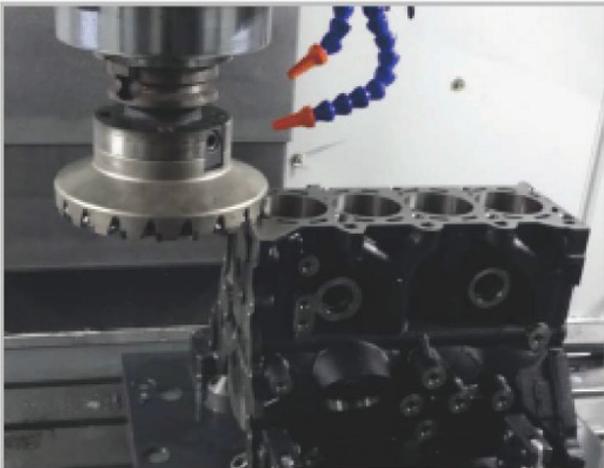
## Application Cases of Solid CBN

Industry-Automobile -Brake Disc



Workpiece: Brake disc  
Funik CBN cutting tool:  
The life is increased by  
The efficiency is promoted by  
Workpiece material: GG25  
Workpiece hardness: HB190-210  
Machining position: Brake surface  
Machining type: Continuous rough machining  
Insert grade: BS7203  
Insert specification: CNMN120712  
Cutting type: Dry cutting  
Cutting parameters:  $V_c=800\text{m/min}$   $a_p=2-3\text{mm}$   
 $f = 0.45\text{mm/r}$

Industry-Automobile-EngineCylinderBlock



Workpiece: Engine cylinder block  
Workpiece material: GG25  
Workpiece hardness: HB190-210  
Machining position: Top face of cylinder block  
Machining type: Interrupted finishing  
Insert grade: BS7505  
Insert specification: SNEN090412  
Cutting type: Dry cutting  
Cutting parameters:  $V_c=470\text{m/min}$   $a_p=0.5\text{mm}$   
 $f=2000\text{mm/min}$

## Application Cases of CBN Tip Brazed Insert

Industry-Automobile-CV Joint



Workpiece: CV joint  
Workpiece material: S55C  
Workpiece hardness: HRC58-62  
Machining position: Inner diameter  
Machining type: Interrupted finishing  
Insert grade: BP4410  
Insert specification: TNGA160416  
Cutting type: Dry cutting  
Cutting parameters:  $V_c=180\text{m/min}$   $a_p=0.2\text{mm}$   
 $f=0.08\text{mm/r}$