



Shaping the world since 1957

Your partner in grinding, honing
and superfinishing processes.



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The company
International

02. Products

Honing and superfinishing stones
Grinding wheels
CBN products

03. Culture

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SERCAP has been a leading abrasive manufacturer, since 1957 and has remained a specialist in the production of abrasive products for precision grinding, honing, and superfinishing operations.

With years of experience, we have honed our unique expertise in developing and producing bespoke abrasive products, enabling our customers to control surface finish with unrivaled precision.

We pride ourselves on remaining at the forefront of innovation, and our team of technical support specialists is always on hand to provide expert advice and assistance for all your grinding, honing, and superfinishing needs.

Our commitment to excellence is reflected not only in the performance of our products but also our responsive and agile customer service. We offer our expertise and products worldwide, and our technical support team will help you select the appropriate product requirements for your specific needs, no matter where you are located. We are dedicated to providing the highest quality products and technical support to ensure your success, and we are proud to be your partner in achieving your goals.





Originally based in Paris, SERCAP has established branches across the world in order to better serve our clients. It first started with our branch in Bucarest (Romania) in 2009. In 2015, the acquisition of the Brazilian company Corindon, based in Indaiatuba (SP), strengthened our presence across Latin America. This strategic expansion continued in 2024 with the launch of ABRA SERCAP Mexico, in Queretaro.

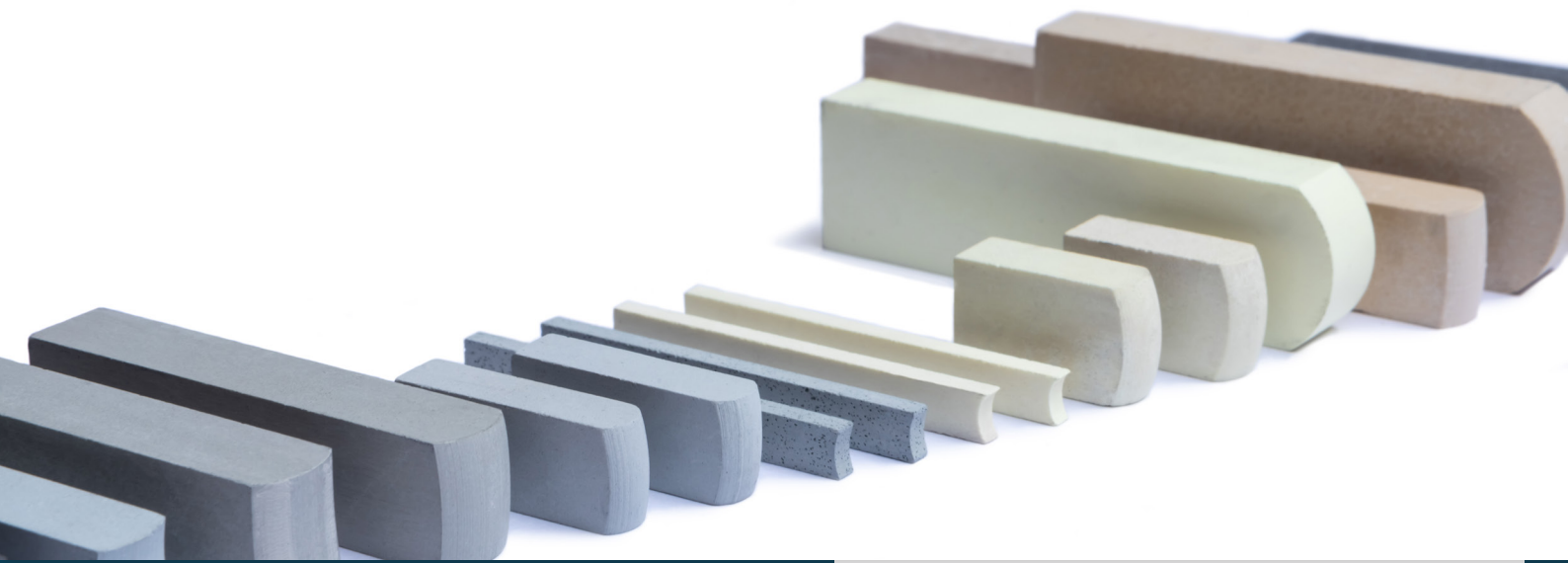
Together, these companies form the ABRA SERCAP Group.

Our high-quality products are supplied to customers worldwide with speed and efficiency. With our presence in multiple countries, we can stay in constant communication with our customers, providing responsive and personalized service to meet their unique needs and challenges. As a result, ABRA SERCAP proudly serves clients in more than 17 countries.



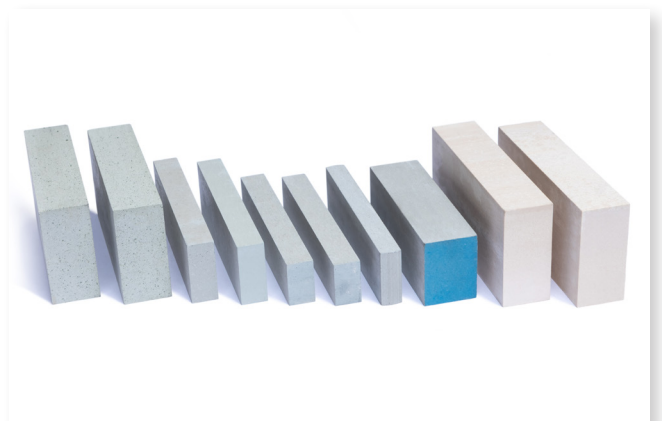
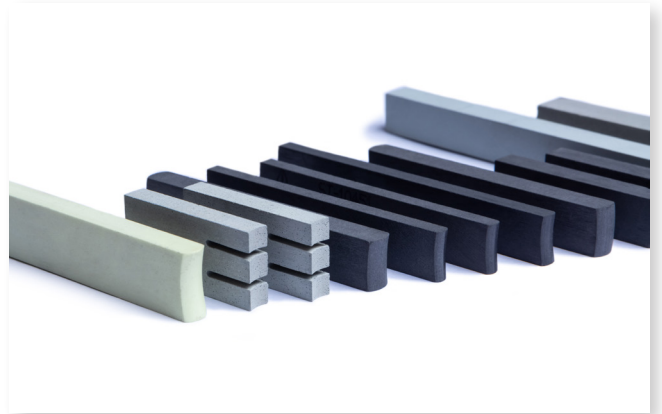
America:
Queretaro, Mexico.
Indaiatuba, Brasil.

Europe:
Paris, France.
Bucarest, Romania.



“Trust ABRA SERCAP’s high-quality honing and superfinishing stones to achieve the desired surface quality with ease and efficiency.”

ABRA SERCAP offers top-of-the-line honing and superfinishing stones for finishing and dressing processes, guaranteeing the most precise surfaces with optimal size and geometric accuracy. Our honing is a crucial step in manufacturing, eliminating geometrical inaccuracies from pre-machining operations. Honing stones correct roundness errors and enhance dimensional and shape precision, resulting in improved product performance. These stones are utilized for various components such as raceways of rolling bearings, friction-optimized components, and sealing surfaces of injection elements.

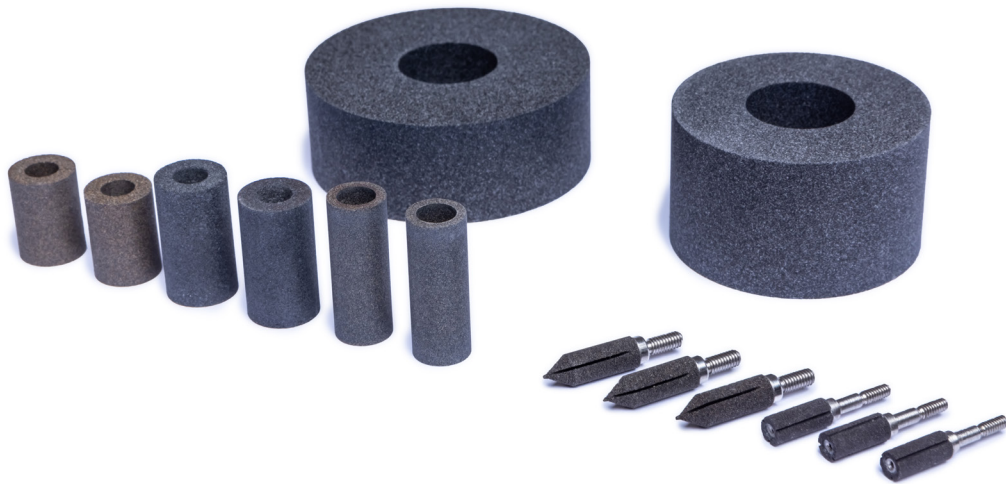




“Experience precision and efficiency with our individually tailored grinding wheels for high stock removal rates and superior surface finishes.”

ABRA SERCAP’s range of advanced grinding wheels are designed to deliver high stock removal rates and the smoothest surface finishes across various industries, such as automotive, steel, and bearing markets. Our technical expertise and use of a wide variety of materials -including alumina, silicon carbide, and special ceramics- make us one of the top manufacturers in the global abrasive market. We offer vitrified and resinoid bonding materials to produce ideal abrasives that meet your special engineering processing requirements, and our grinding wheels are individually tailored to suit your workpiece’s specific needs.





Transform your manufacturing operations with ABRA SERCAP's CBN grinding wheels - highly effective, cost-efficient and compatible with high-speed grinders and automated lines.

Our CBN grinding wheels offer exceptional hardness and durability comparable to diamonds, making them the perfect solution for boosting manufacturing productivity. Our cutting-edge CBN abrasive grain technology minimizes abrasion, ensuring highly effective machining with long-lasting tool life. With compatibility for high-speed grinders and automated lines, SERCAP CBN grinding wheels are a cost-effective and reliable option for industries looking to optimize their manufacturing operations.





1. Customer Focus:

We put our customers at the heart of everything we do. Our goal is to work closely with them to provide high-quality, high-performance products. Our commitment to them has been recognized with several awards from our main customers.

2. Expertise:

With extensive experience in the industry, we have cultivated a unique know-how. We have gained expertise at all levels, from formulation to control of manufacturing, which allows us to provide exceptional products and services to our customers.

3. Innovation:

We are constantly looking for innovative solutions to meet the new demands of our customers and beyond. Our goal is to stay ahead of the curve and provide cutting-edge products and services that help our customers succeed.

4. Adaptability:

We offer tailor-made solutions to improve the performance of each client application, increase productivity and reduce costs. We understand that every customer is unique, and we are committed to providing solutions that meet their specific needs.

5. Responsiveness:

Our structure allows us to quickly respond to the needs of our customers, especially in case of emergency. We prioritize fast and efficient communication, so that our customers can count on us to be there for them when they need us most.



At ABRA SERCAP, we are **committed to providing our customers with high-quality abrasive products.**

We adhere to strict quality standards and have obtained ISO 9001 certification to ensure consistent quality across our manufacturing processes.

Technical specifications

HONING STONES



APPLICATION

Aluminum Oxide Honing Stones are recommended for all types of steel, while Silicon Carbide stones are suitable for cast iron and non-ferrous materials.

Grain size is also selected based on the required material removal rate and the desired surface finish. When necessary to meet specific requirements, the process can be carried out in multiple operations.

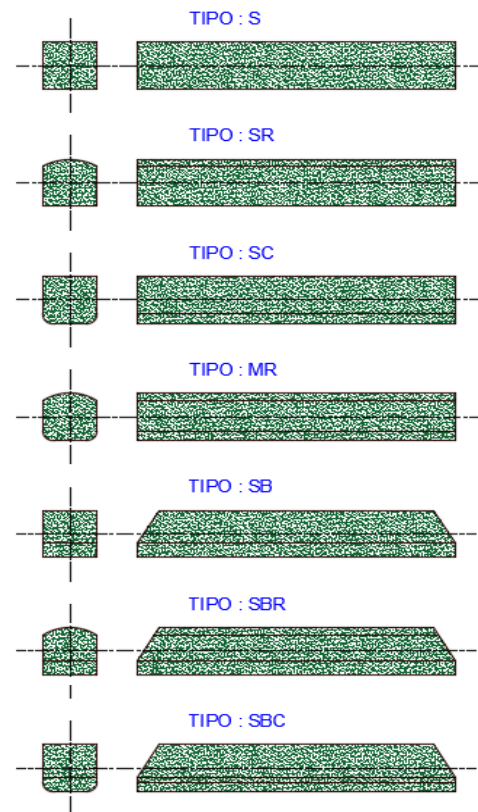
When selecting the hardness of a stone, the following rule applies:

For hardened material = use SOFT-grade stones
For soft material = use HARD-grade stones

In many cases, it is necessary to perform tests to determine the most suitable stone grade. This is especially relevant in mass production, where the honing process involves high associated costs.

Material	Abrasive	Grit Size	Hardness	Application
Gray Cast Iron HB < 200 Kgf/mm ²	2C	120 - 180	25 - 40	Honing
		280 - 400	20 - 40	Superfinishing
Gray Cast Iron HB = 220/240 Kgf/mm ²	2C	120 - 180	30 - 65	Honing
		280 - 400	25 - 55	Superfinishing
Gray Cast Iron HB = 250/300 Kgf/mm ²	2C	120 - 180	45 - 75	Honing
		280 - 400	35 - 65	Superfinishing
Hard Chrome	BA	180 - 280	90 - 150	Honing
		400 - 500	125 - 180	Superfinishing
Stainless Steel	2C	120 - 180	50 - 100	Honing
		280 - 400	35 - 60	Superfinishing
Aço 1020 HB < 50 HRB	BA	100 - 10	35 - 65	Honing
		240 - 400	45 - 75	Superfinishing
Steel 1045 HB = 50 - 70HRB	BA	80 - 120	70 - 90	Honing
	BA	120 - 180	75 - 110	Honing
Alloy Steel Hardness = 100HRB	2C	180 - 320	50 - 75	Superfinishing
	2C	320 - 500	55 - 80	Superfinishing
Hardened Steel Hardness HRC 58 - 60	BA	120 - 180	35 - 75	Honing
	2C	320 - 500	35 - 60	Superfinishing
Hardened Steel Hardness HRC 60 - 62	BA	120 - 180	75 - 150	Honing
		220 - 400	80 - 150	Superfinishing
Nitrided Steel	2C	120 - 180	80 - 175	Honing
		220 - 400	80 - 150	Superfinishing
Aluminum	2C	180	75 - 125	Honing
		600	65 - 120	Superfinishing
Bronze	2C	120 - 180	30 - 55	Honing
		280 - 400	30 - 65	Superfinishing
		600	Resin	Polishing

PROFILES



DIMENSIONS

Width	Thickness	Length
3,0	3,0	
3,17	3,17	
4,0	4,0	
5,0	5,0	76,2
6,0	6,0	100,0
6,35	6,35	101,6
8,0	8,0	120,0
9,52	9,52	150,0
10,0	10,0	152,4
12,0	12,0	160,0
12,7	12,7	
13,0	13,0	
15,0	15,0	
16,0	16,0	

* The values above refer to the most common dimensions used in the honing process. For other sizes, please contact our Technical Department.

Technical specifications

INTERNAL GRINDING WHEEL



SPECIFICATION

CB 120 M 6 VRI W

Abrasive Type	Size Grain	Hardness	Structure	Bond	Treatment
Aluminum Oxide	46	Hard	12 - Opened	Vitrified	Wax
BA (white)	60	R	6 - Standard	V	W
DR (pink)	80	↑			
DAR (mixture)	100	↓			
Ceramic Grain	120	F	3 - Closed		Sulphur
CB	150	↓			
XMA	180	Soft			
	220				S

ABRASIVE TYPE

Ceramic Grain

Ceramic Abrasives were developed to maximize the performance of conventional abrasives reducing the cost of grinding operations. This abrasive is characterized mainly by high cutting power and maintenance of the profile.



SIZE GRAIN

The size of particles observes certain criteria according to International Technical rules and Standards for abrasives, using the Micron as the unity of measure.

HARDNESS

The hardness is determined by the higher or lower capacity of the bond to retain the abrasive grain. The hardness of the grinding wheel is indicated by letters in alphabetical order.

F, G, H, I = Soft
 J, K, L, M = Medium
 N, O, P, Q, R = Hard

STRUCTURE

The structure of the grinding wheel is defined by the relation between the bond, grains and porosity. The total sum represents 100% volume of the abrasive piece.

BOND

Bonds are ceramic (V) materials and it is used to join the abrasive grains.

TREATMENT

In some cases the ceramic grinding wheel can be treated by impregnation with wax or sulphur to improve their performance. This materials acts:

- In the oil, increasing the durability of the abrasive;
- Helping in the dissipation of the heat in the contact area, avoiding the burning and the plastering of grinding wheel..

Technical specifications

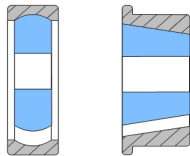
INTERNAL GRINDING WHEEL



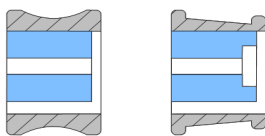
INTERNAL GRINDING PROCESS

The Internal grinding process consists in grinding holes and races. The parameter settings of rotation of the workpiece and the grinding wheel and the system of dressing are very important to achieve the results.

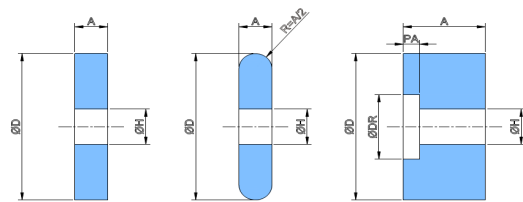
- Races Internal Grinding



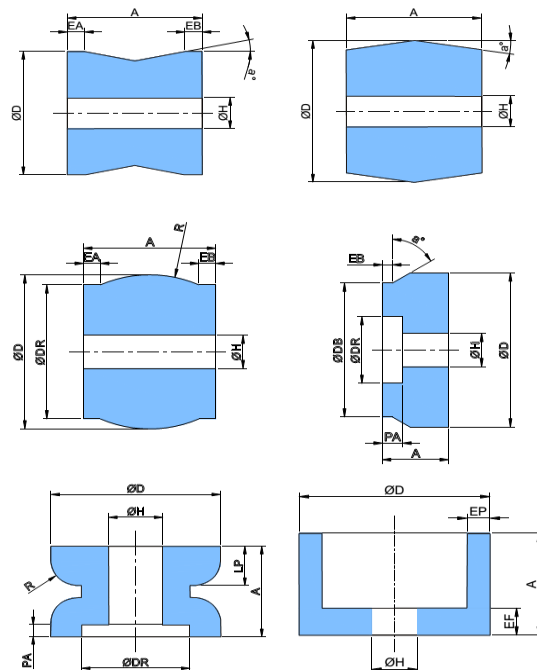
- Hole Grinding Wheels



STANDARD SHAPES



SPECIAL SHAPES



TOLERANCES

Ø D	A	Ø H
till 6,4	till 3,2	3 a 6,4
6,5 a 10	3,3 a 6,4	6,5 a 8
10,1 a 16	6,5 a 10	8,1 a 10
16,1 a 25	10,1 a 13	10,1 a 13
25,1 a 32	13,1 a 16	13,1 a 16
up to 32,1	up to 16	16,1 a 20

PROBLEMS / SOLUTIONS

- Deforming

Problem
- Soft grinding wheel;
- Grinding wheel with thicker grain;
- Speed relation of piece / grinding wheel is incorrect;
- Incorrect dressing;
- Diamond in bad condition.

Solution
- Increase the hardness;
- Use a thinner grain;
- Adjust the speed;
- Correct, reduce the depth and speed;
- Verify the dresser condition.

- Burning or Plastering

Problem
- Hard grinding wheel;
- Grinding wheel with thinner grain;
- Low speed of piece;
- Excessive cut-off advance;
- High speed grinding wheel;
- Insufficient coolant or misdirected.

Solution
- Decrease the hardness;
- Use a thicker grain;
- Increase the speed;
- Reduce advance;
- Reduce the rotation;
- Increase coolant.

Technical specifications

SUPERFINISHING STONES



SPECIFICATION

Abrasive Type	Size Grain	Hardness	Bond	Treatment
Aluminum Oxide (White)	320	Hard 25	Vitrified	Sulphur
BA	400		V	S
Silicon Carbide (Green)	500	180 Soft	Resin	Wax
	600			
	800			
	1000			
	1200			
2C	1500	B	W	
Silicon Carbide (Black)	1C			

ABRASIVE TYPES

Al₂O₃ - White Aluminum Oxide

Artificial abrasive obtained through the bauxite electrofusion. It's high alumina and the high hardness, guarantee a good friability and mechanic resistance, that is adequate to most of the finishing procedures, and it provides a good removal of material with lower roughnesses.



SIZE GRAIN

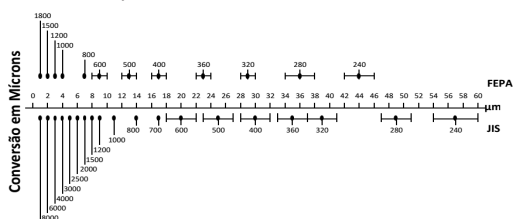
SiC - Carbureto de Silício (verde e preto)

This artificial abrasive is obtained through the fusion of quartz in electric furnaces. Due to its high hardness and friability, this abrasive is recommended in procedures that require a lower removal of material, but need an excellent visual aspect of the finished part.



HARDNESS

The size of abrasive particles observes certain criteria according to International Technical rules and Standards for Micro Abrasives, using the micron as the unity of measure.



The hardness of superfinishing stones is determined by the higher or lower capacity of the bond to retain the abrasive grain. The hardness of the stones are indicated for number in inverse order, that reflect the Brinell Scale.

BOND

Bonds are ceramic (V) or resinoid (B) materials. They are used to join the abrasive grains together without interference with the action of the abrasives materials in the finishing process.

TREATMENT

The performance of the superfinishing stones may be improved by the process of impregnation. This process consists in the inclusion of the additives like:

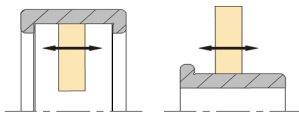
- Oil, increasing the durability of the stone;
- Help in the dissipation of the heat in the contact area, avoiding the burning and plastering of the stone.



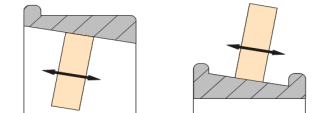
SUPERFINISHING PROCESS OF RINGS

The superfinishing of rings is made on machines that execute simultaneous movements of rotation, oscillation and pressure. The adjustments of these parameters are very important to achieve the best results.

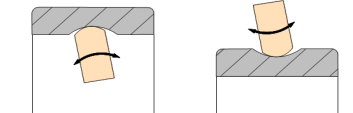
- Cylindrical Bearings



- Conics Bearings

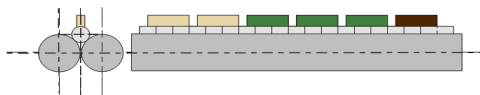


- Spherical Bearings



FINISHING OF ROLLERS

The process of finishing rollers is made in through feed machines, wherever the stores are mounted in sets.



COOLANT

The finishing procedures require the use of mineral coolant. We recommend the use of appropriated filters, which should be indicated by the oil manufacturer, because the contamination and impurity of the oil can result in the following problems during the process:

- Plastering of the stone;
- Increase of rugosity;
- Superficial streaks.

PROBLEMS AND SOLUTIONS

- Low Stock Removal

Machine

- Increase the oscillation;
- Increase of the pressure;
- Decrease of the rotation of the piece;
- Increase of the rugosity of the rectified piece.

Stone

- Use of a softer specification;
- Use of a thicker grain;
- Use of an aluminum oxide instead of silicon carbide.

- Plastering of the Stone

Machine

- Decrease of the oscillation;
- Decrease of the pressure;
- Decrease of the rotation of the piece;
- Increase of the rugosity of the rectified piece.

Stone

- Use of a softer specification;
- Use of a thicker grain;
- Use of impregnation.

- High Rugosity

Machine

- Increase of the oscillation;
- Decrease of the pressure;
- Increase of the rotation of the piece;
- Verification of the rugosity in the rectified piece.

Stone

- Use of a harder specification;
- Use of a thinner grain;
- Use silicon carbide instead of aluminum oxide;
- Use of impregnation.

- Excessive Consumption

Machine

- Decrease of the oscillation;
- Decrease of the pressure;
- Increase of the rotation of the piece;
- Decrease of the rugosity of the rectified piece.

Stone

- Use of a harder specification;
- Use of a thinner grain;
- Use of impregnation.

- Finishing Stone Breaking

Machine

- Decrease of the oscillation;
- Decrease of the pressure;
- Correction of the oscillation limits.

Stone

- Use of a harder specification;
- Decrease of the stone exposed area.

- High Ondulation

Machine

- Increase the contact area using larger stones;
- Increase the speed of the piece.

Stone

- Use of a thicker grain.

Technical specifications



SPECIFICATION

Abrasive Type	Grit Size	Hardness	Structure	Bond	Concentration
CBN	Thinner 46	Hard P	12 - Opened	Vitrified	200
1B	↕ 252 Thicker	↕ F Soft	6 - Standard	V	175
2B					150
3B					125
			3 - Closed		100
					75
					50

ABRASIVE TYPE

Cubic Boron Nitride - CBN

The CBN is a synthetic abrasive twice harder and four times more resistant than the abrasion of conventional abrasives. Only the diamond is a more resistant than CBN.



SIZE GRAIN

The size of the abrasive grains affects the power of removal of CBN grinding wheels, the thicker the grain, more cutting power, and hence, the ground surface will be rougher. The nomenclature follows the CBN International Standards according to table below:

Grain Size	FEPA	ISO
60 / 80	B 252	250 / 180
80 / 100	B 181	180 / 150
100 / 120	B 151	150 / 125
120 / 140	B 126	125 / 106
170 / 200	B 107	106 / 90
170 / 200	B 91	90 - 75
200 / 230	B 76	75 / 63
230 / 270	B 64	63 / 53
270 / 325	B 54	53 / 45
325 / 4000	B 46	54 / 45

HARDNESS

The hardness is determined by the higher or lower capacity of the bond to retain the abrasive grain. The hardness of the grinding wheel is indicated by letters being D the softest and P the hardest.

STRUCTURE

The structure of the CBN grinding wheels is defined by the relation between the bond, grains and porosity. The total sum represents 100% volume of the abrasive piece.

BOND

Bonds are ceramic (V) materials and it is used to join the abrasive grains.

CONCENTRATION

The performance of a Vitrified CBN Grinding Wheel is also related to the concentration of CBN, the higher this concentration, better the performance of the wheel.

Concentration is the amount of CBN Grinding Wheel per cm³. Its measurement is made in carat and obey an International Standard.

TECHNICAL DATA

The process of Grinding with CBN Wheels improves the operational capability of modern machines available in the global market, providing more productivity and efficiency. CBN Grinding Wheels have a longer life due to long intervals of dressing added to the smallest increment, providing high performance between changes of grinding.

Another advantage is the quality of the parts rectified without generating excessive heat, getting better finishings and better consistency piece by piece.

SURFACE INTEGRITY

The performance of a Grinding Wheel can be compared through resistance surface tensions applied during grinding.

In a conventional grinding wheel with normal working conditions are only applied compressive residual forces, if we increase this force, the applied voltage will start to act internally on the wheel reducing its cutting power, but in the case of vitrified CBN wheels is possible to work with much higher tensions on the surface without compromising cutting power.

DRESSING

The effect of depth and speed during dressing mainly affects the roughness of the workpiece. The faster the passage of the dresser higher the surface roughness rectified part and it proves that the roughness can be controlled.

When the depth of the dressing is less than 10 microns per pass, the roughness receives almost no interference of the operation and so the surface roughness is defined by the size of the abrasive.

APPLICATIONS

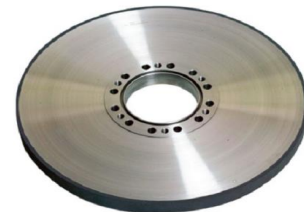
- Internal Grinding Wheel - Races and Holes



- Special Mounted Points



- Crankshaft / Camshaft



- Special Shapes and Cups

