# 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 |
| | 60 | R | | | |
| BA (white) | 80 | ↕ | | V | W |
| DR (pink) | 100 | | 6 - Standard | | |
| DAR (mixture) | 120 | | | | Sulphur |
| | 150 | | | | |
| Ceramic Grain | 180 | F | 3 - Closed | | S |
| CB | 220 | Soft | | | |
| XMA | | | | | |

## ABRASIVE TYPE

Ceramic Grain

Ceramic Abrasive 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;

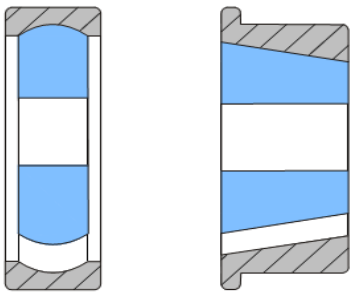
- Helping in the dissipation of the heat in the contact area,avoiding the burning and the plastering of grinding whee..

# INTERNAL GRINDING WHEEL

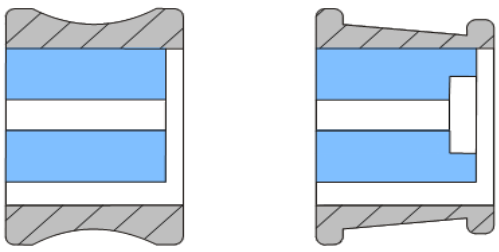
## INTERNAL GRINDING PROCESS

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.

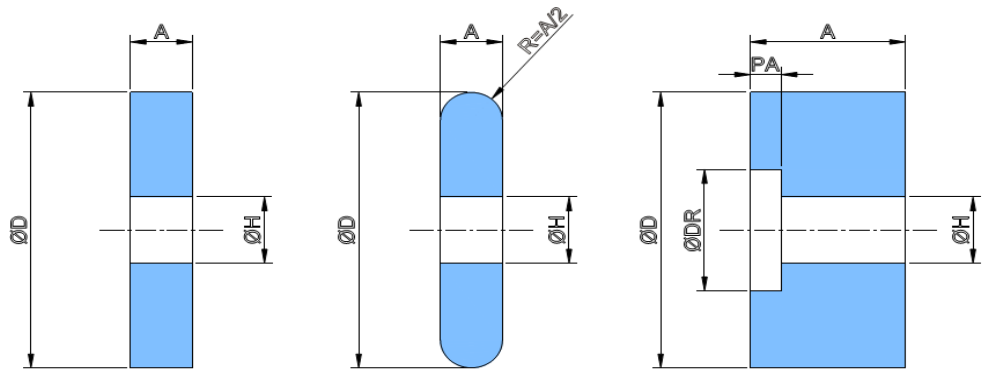
- Races Internal Grinding



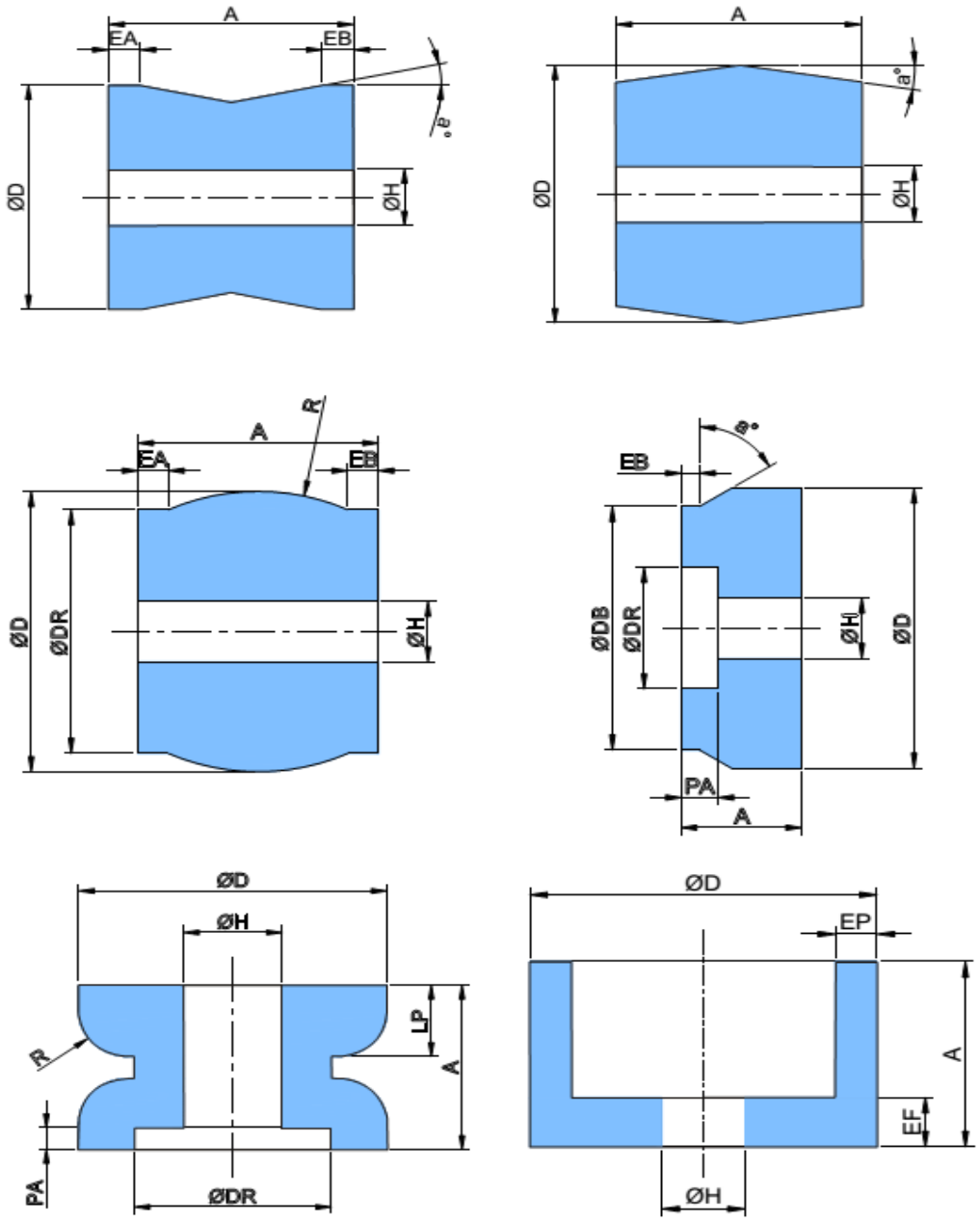
- Hole Grinding Wheels



## STANDARD SHAPES




## SPECIAL SHAPES




## TOLERANCES

| Ø D | |
|---|---|
| till 6,4 | -0,08 |
| 6,5 a 10 | -0,10 |
| 10,1 a 16 | -0,12 |
| 16,1 a 25 | -0,15 |
| 25,1 a 32 | -0,20 |
| up to 32,1 | -0,25 |

| A | |
|---|---|
| till 3,2 | +0,05 |
| 3,3 a 6,4 | +0,07 |
| 6,5 a 10 | +0,10 |
| 10,1 a 13 | +0,12 |
| 13,1 a 16 | +0,15 |
| up to 16 | +0,20 |

| Ø H | |
|---|---|
| 3 a 6,4 | +0,05 |
| 6,5 a 8 | +0,06 |
| 8,1 a 10 | +0,07 |
| 10,1 a 13 | +0,08 |
| 13,1 a 16 | +0,10 |
| 16,1 a 20 | +0,15 |

## PROBLEMS / SOLUTIONS

**- Deforming**

| Problem | Solution |
|---|---|
| - Soft grinding wheel; | - Increase the hardness; |
| - Grinding wheel with thicker grain; | - Use a thinner grain; |
| - Speed relation of piece / grinding wheel is incorrect; | - Adjust the speed; |
| - Incorrect dressing; | - Correct, reduce the depht and speed; |
| - Diamond in bad condition. | - Verify the dresser condition. |

**- Burning or Plastering**

| Problem | Solution |
|---|---|
| - Hard grinding wheel; | - Decrease the hardness; |
| - Grinding wheel with thinner grain; | - Use a thicker grain; |
| - Low speed of piece; | - Increase the speed; |
| - Excessive cut-off advance; | - Reduce advance; |
| - High speed grinding wheel; | - Reduce the rotation; |
| - Insufficient coolant or misdirected. | - Increase coolant. |

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