

Rotary burrs

The following information about this special tool called Rotary Burrs are found in the General Catalog of the company CERIN S.p.A. (Affi – Verona – Italy).

There are many types of rotary burrs in accordance of the shape, the size and of the kind of cutting edges. Basically all these tools are object of the DIN normalization Tab N°8033. Cerin have the following types of cutting edges:

1)- Aluminium Cut

Particularly suitable for working aluminium, magnesium, plastic and hard rubber. Gives high cutter efficiency, with good removal material. The specific features of this type of cut facilitate rapid removal of chips preventing these from clogging the tool.

The profile of the teeth is shown in the figure N°1.

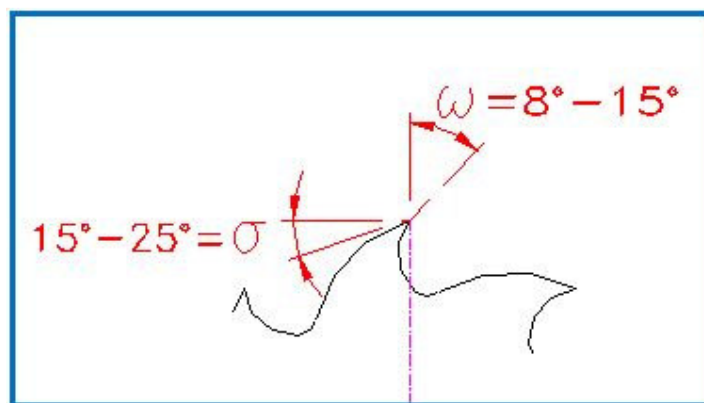


Fig.N°1- Profile of the tooth Aluminium type



Fig. N°2- Aluminium type rotary burrs

In the tab. N°1 are shown the characteristic of different types of cutting edges.

Tab. N°1 – Characteristic of different types of cutting edges

<i>Aluminium cut</i>			<i>Course cut</i>		
<i>Diameter</i>	<i>N° of teeth</i>	<i>Pitch</i>	<i>Diameter</i>	<i>N° of teeth</i>	<i>Pitch</i>
4	5	2,51	4	10	1,26
6	5	3,77	6	12	1,57
8	6	4,19	8	14	1,79
10	6	5,23	10	16	1,96
12	6	6,28	12	18	2,09
16	8	6,28	16	24	2,09
20	10	6,28	20	30	2,09
25	12	6,54	25	34	2,30
<i>Medium cut</i>			<i>Fine cut</i>		
4	14	0,90	4	18	0,70
6	16	1,18	6	20	0,94
8	18	1,40	8	24	1,05
10	20	1,57	10	28	1,12
12	24	1,57	12	35	1,08
16	30	1,67	16	40	1,25
20	35	1,79	20	48	1,31
25	40	1,96	25	54	1,45

2)- Course Cut

This type is intermediate, between cut 1 and cut 3 and it's recommended for soft materials, like: bronze, brass, zinc, copper and other easily removable materials.

The shape of this kind of tooth are shown in the figure N°3.

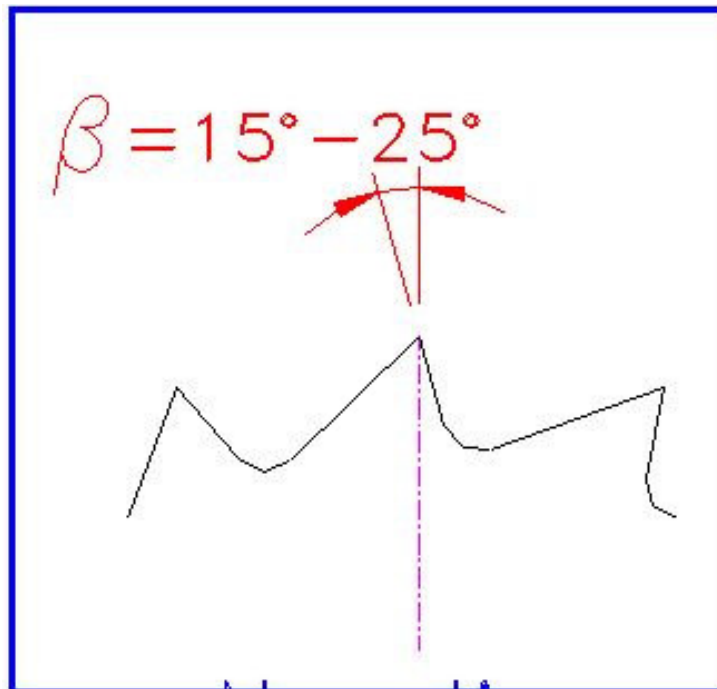


Fig. N°3- Profile of the tooth Course, Medium and Fine cut



Fig.N°4- Rotary burrs type Course, Medium and Fine cut (Courtesy Cerin SpA- Verona- Italy)

3)- Medium cut

Standard cut, suitable for steels (including hardened steel), cast steel, weld seams and in general almost all metallic materials. To get with optimum efficiency, it gives a good surface finish.

4)- Fine cut

Particularly suitable for hardened steel up to 66 HRc and for obtaining a very good surface finish.

5)- Diamond cut

The cutting edges of the flutes with right hand helix are intersected with left hand groves. In this way the axial section of tool have the position shown in the figure N°5.

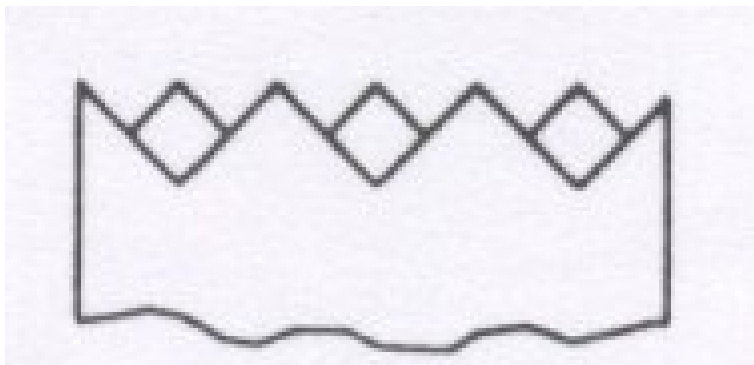


Fig.N°4- Position of cutting edges of diamond cut rotary burrs



Fig.N°5- Rotary burrs diamond cut type (Courtesy Cerin SpA – Affi – Verona – Italy)

6)- Double cut

Universal cut suitable for working on all materials, including hardened steels and corrosion resistant materials.

It reduces vibrations and gives a better control of the tool during working. Considerable shaving capacity with good surface finish.

In figure N°6 there are the axial section of this kind of rotary cut.

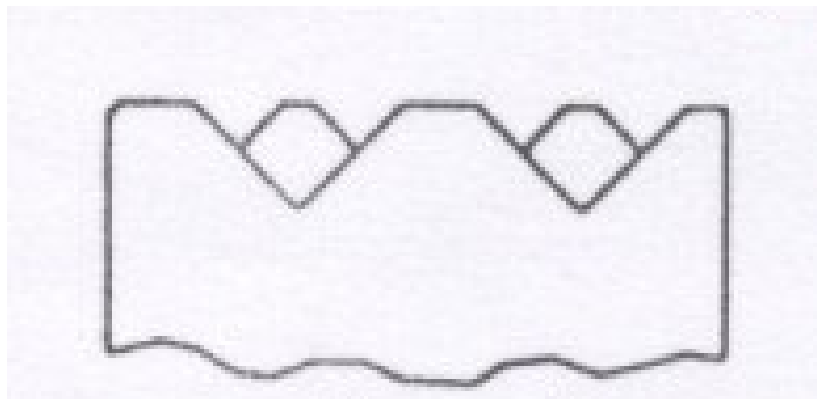


Fig.N°6- Position of cutting edges of double cut rotary burrs

In the figure N°7 is shown an example of Ball Shape rotary burrs.

For to improve the cutting action the cutting edges of Cerin tools arrive to the center.



Fig. N°7- Ball Shape rotary burrs (Courtesy Cerin SpA – Affi – Verona – Italy)

Working condition

Tab N°2 – Cutting speed in m/min for each type of rotary burr

Type of cut	Minimum cutting speed	Maximum cutting speed
Aluminium	800	1000
Course	650	800
Medium	500	650
Diamond	500	650
Double	500	650
Fine	350	500

Normally this kind of tool working without coolant.