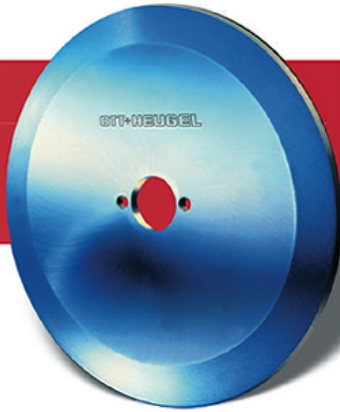


OTT+HEUGEL



*Circular Knives
made of HSS and Solid Carbide*

OTT+HEUGEL Circular Knives

Over the last decades, OTT+HEUGEL had established a leading role in manufacturing circular knives, well-known by the brand names DuraCut[®], CarboCut[®] and CeramCut[®]. The typical application is to find in the paper and corrugated industry as well as in the rubber and electronic industry.

DuraCut[®] Circular Knives are available in different steel qualities like HSS/DMo5, HSS-E/EMo5Co5 and various tool steels. All Circular Knives will be produced for customers special application from diameter 50 mm up to 570 mm. Typical applications are edging, trimming, length and cross cutting of paper, cardboard materials, plastics, rubber, leather, plasters and bandaging material, textiles, fitted carpeting, floor coverings and wire gauzes.

CarboCut[®] Circular Knives are supplied in high premium Solid Carbide quality. These Circular Knives are designed for high precision automatic cutting lines and wherever tight tolerances are required. All Circular Knives are manufactured from diameter 50 mm up to 300 mm. Different coatings are also available. Typical applications are for the automotive and electronic industries.

CeramCut[®] Circular Knives are high precision cutting tools made of ceramic. These tools are individual solutions and are characterised by their extreme high mechanical hardness and wear resistance. The basic materials are different selections of oxides, carbides, etc. These tools are supplied up to a maximum diameter of 200 mm.

We reserve the right to make technical changes.

Steel and Solid Carbide Qualities

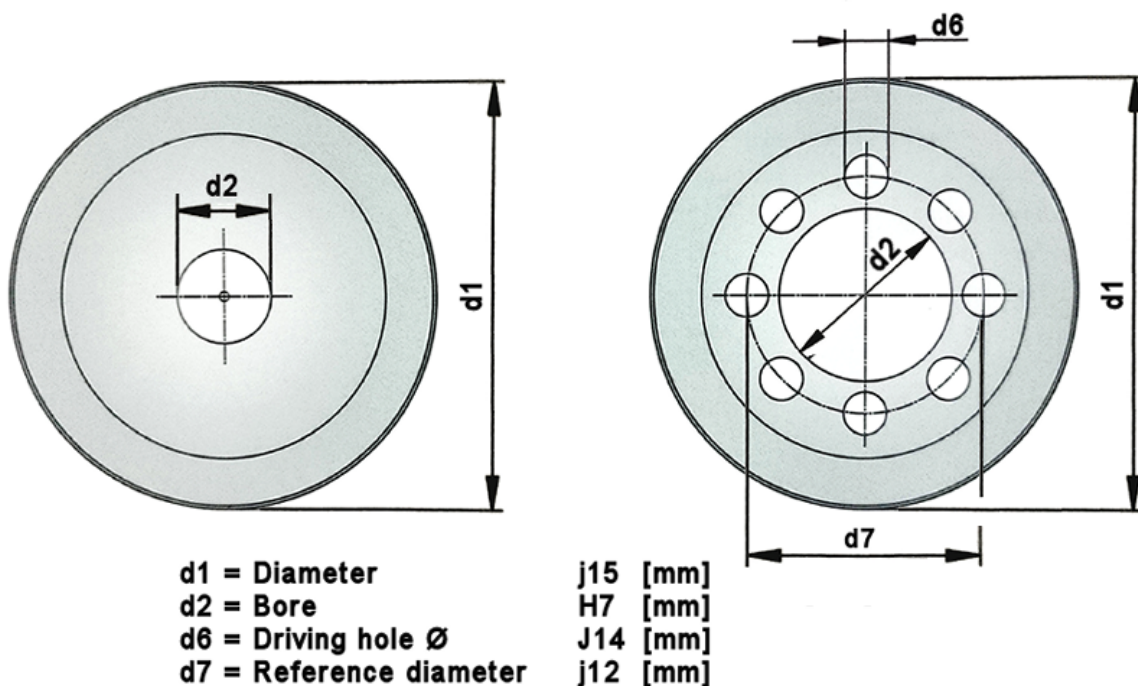
High speed steel, tool steel and powder steel:

	O+H quality	DIN	AISI	JIS	Hardness
1.	HSS	1.3343	M2	SKH51	<i>The hardness will be defined in accordance to the application</i>
2.	HSS-E	1.3243	M35	SKH55	
	HSS	1.3355	T1	SKH2	
3.	Tool steel	1.2080	D3	SKD1	
		1.2379	D2	SKD11	
4.	Powder steel		ASP23 ASP53		

Solid carbide qualities:

	O+H quality	DIN	Hardness app.	Tensile strength N/mm ²	Grain size μm
1.	CarboCut [®]	G20	1340 HV	2500	1.0 - 2.0
2.	CarboCut [®]	G20	1220 HV	2800	1.0 - 2.0

Circular Knife Definition

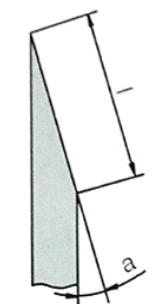
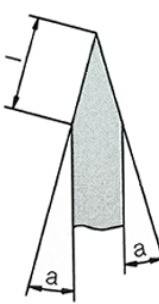
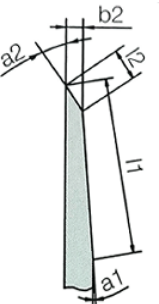
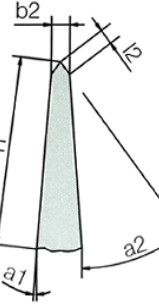


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Surface Technology and Coatings

The circular knives made of HSS and solid carbide are available with different coatings depending on the application. Coated circular knives are mainly used in order to reduce the friction and to improve the sliding behaviour. Beside the thin layer coatings such as CONCEPT based on titaniumnitrid there are also anti-friction coatings available such as Teflon etc.

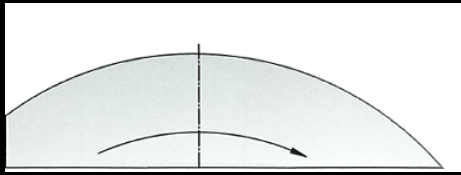
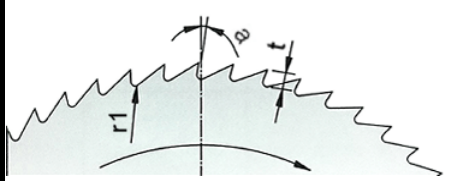
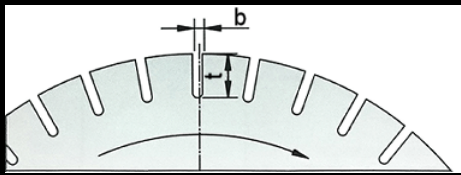
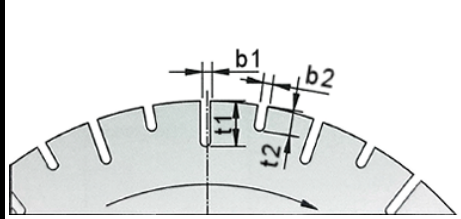
Bevel Design

Bevel design	OTT+HEUGEL drawing	OTT+HEUGEL standard no. examples	Quality	Diameter [mm]	Width [mm]	Tolerance of width	Reference to the application
single bevel		standard form 12	HSS	Ø 50-570	1.0 - 12.0	HSS standard ±0.05mm up to Ø 499mm; ±0.15mm up to Ø 570mm; solid carbide	1
			WS	Ø 50-570	1.0 - 12.0		
			VHM	Ø 50-315	1.0 - 12.0		
			PM	Ø 50-570	1.0 - 12.0		
double bevel		standard form 11	HSS	Ø 50-570	1.0 - 12.0		
			WS	Ø 50-570	1.0 - 12.0		
			VHM	Ø 50-315	1.0 - 12.0		
			PM	Ø 50-570	1.0 - 12.0		
single bevel with top bevel		standard form 16	HSS	Ø 50-570	1.0 - 12.0		
			WS	Ø 50-570	1.0 - 12.0		
			VHM	Ø 50-315	1.0 - 12.0		
			PM	Ø 50-570	1.0 - 12.0		
double bevel with top bevel on both sides		standard form 15	HSS	Ø 50-570	1.0 - 12.0		
			WS	Ø 50-570	1.0 - 12.0		
			VHM	Ø 50-315	1.0 - 12.0		
			PM	Ø 50-570	1.0 - 12.0		

HSS=high speed steel **WS**=tool steel **VHM**=solid carbide **PM**=powder material

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Tooth and Notch Design

Tooth/Notch design	OTT+HEUGEL drawing	OTT+HEUGEL standard examples	Definition	Reference to the application
without tooth and notch design		ATBN 03333	-	A
standard tooth		ATBN 03334	t = toothdepth r = radius a = rake angle	B
standard notch		ATBN 03336	b = width t = depth	C
special notch		ATBN 03338	b1 = width t1 = depth b2 = width t2 = depth	D

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Applications with reference to Bevel and Tooth Design

Application	Industry	Examples	Dimension [mm]	Quality	Reference to bevel and tooth design
	tube and profile industry, rubber, plastic in combination with steel	hydraulic hoses for the automotive industry, high pressure hoses for the chemical industry	300 x 2.5 x 50 260 x 1.5 x 50	HSS-E WS	2 A 4 D 3 C
	textile, foamed material	sealing and insulating material, textile sheet, packing material	250 x 2.0 x 32	HSS	1 C 2 A
	paper and cardboard industry	cardboard tubes for toilet paper, round cartons for packing industry	125 x 2.0 x 60	HSS	4 A
	foil and adhesive tape industry	aluminium and pvc foil, single or double adhesive tapes, surgical bandage	200 x 1.5 x 30	solid carbide	3 A 2 B

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