SULCORTE

CERMET AND TCT
TIPPED CIRCULAR SAW BLADES

www.sulcorte.com.br

Completing 25 years of tradition in the metalworking industry, Sul Corte is positioned as the leading company in Latin America in the manufacture of HSS Circular Saw Blades and Tipped Circular Saw Blades (CERMET and CARBIDE), besides being the leader in the industrialization and commercialization of Band Saws and Industrial Cutting Machines in Brazil. The structure of the Sul Cortes has a modern factory park distributed in 12,000 square meters of area in the city of Caxias do Sul - RS and its two subsidiaries: Joinville - SC and Valinhos - SP.

With latest technology, Sul Corte offers high quality products and services, coupled with excellence in the pursuit of total customer satisfaction. In addition to all this, Sul Corte has been ISO 9001 certified for over ten years.

QUALITY SYSTEM CERTIFICATION
DNV·GL
ISO 9001

ISO 9001:2015

FROM BRAZIL TO THE WORLD

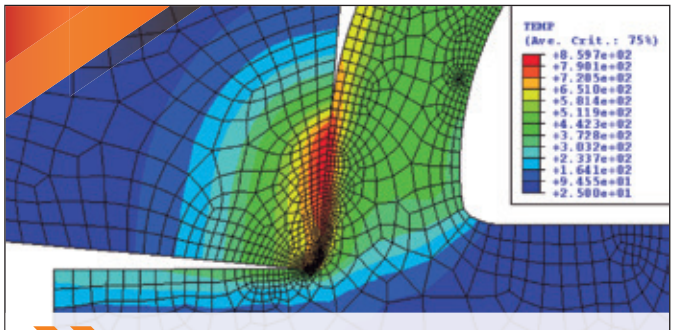
TRADITION AND QUALITY

Already consolidated in the national market, the company also has a network of representatives and distributors that operate worldwide. Circular saws from Sul Corte are already present in more than 20 countries, with sales to South America, North America, Europe, Africa, Asia and Oceania.

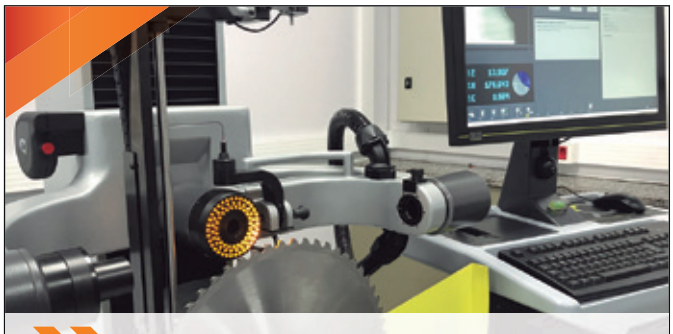
PRODUCT QUALITY

Sul Corte's circular saws are manufactured using the know-how acquired through studies and tests developed over the years. Knowledge-based technology enables us to offer our customers the best cutting solutions. Continuous improvement delivers superior quality to ensure the best blade performance. Our quality control is fully aligned with production, verifying and analyzing all the saws produced to the highest quality standards.

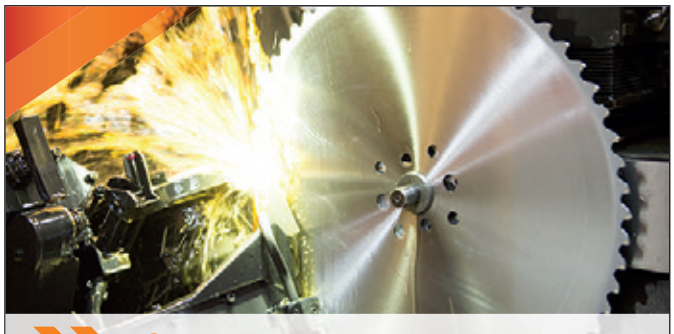
PRECISION ENGINEERING



RESEARCH AND DEVELOPMENT



CUTTING EDGE TECHNOLOGY



QUALITY

PVD COATING

BLACK and CHROME coatings are among the most advanced PVD (physical vapor deposition) technologies, with specific characteristics for each type of cut. These coatings increase surface hardness, wear and temperature resistance and decrease the friction generated during cutting by providing:

- HIGHER PERFORMANCE
- SHORTER CUTTING TIME
- HIGHER PRODUCTIVITY
- INCREASED BLADE LIFE

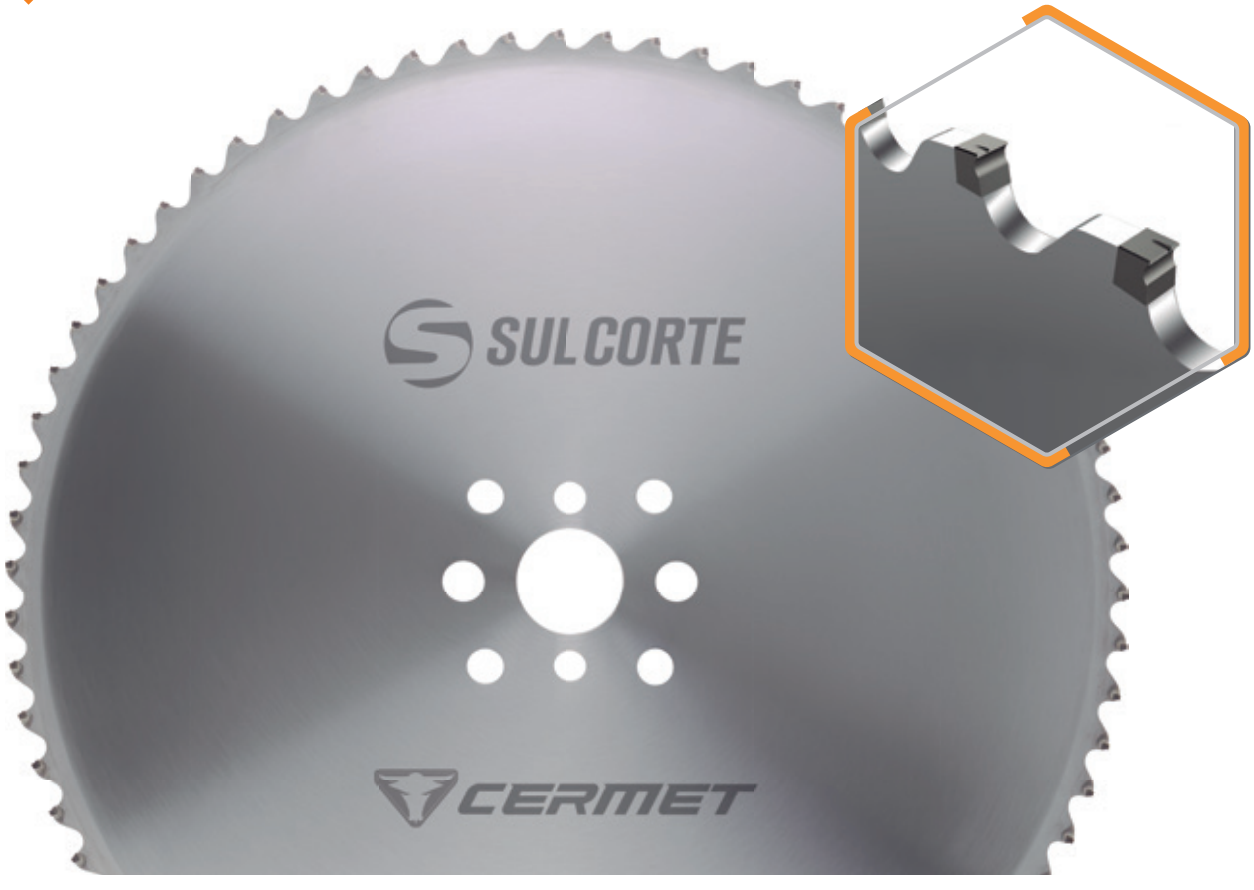
BLACK COATING

The ideal choice for cutting conditions where the saw is subjected to high load levels under high temperatures. A high hardness coupled with high toughness provides excellent protection against erosion and abrasive wear. Its nano structure guarantees a low friction coefficient ideal for high cutting speeds.

CHROME COATING

This coating has been specially developed for the most demanding cutting conditions. Its microstructure results in an extremely tough and stable coating, providing superior results in dry cutting. Its resistance to oxidation under high temperatures allows even higher cutting rates and feed rates

CUTTING SOLID MATERIALS



CERMET

The CERMET line of saws is ideal for cutting solid sections in low, medium and high carbon steels. Its inserts have metallic and ceramic characteristics, which grants high hardness and good toughness, increasing its impact resistance compared to pure ceramics.

The geometry of the tip gives the tool a reduction of shear forces and contributes to a better flow of the chip.

Main Dimensions

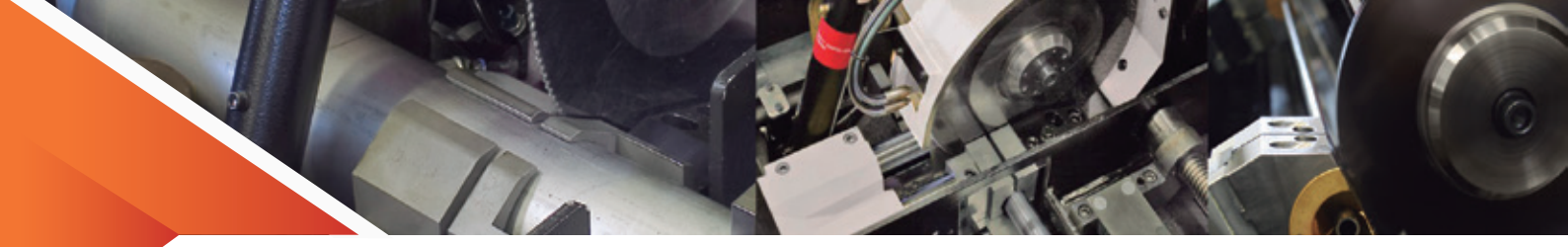
Ø	THICKNESS	CENTRAL BORE	TEETH
250	2,0/1,70	32/40	54
			60
			72
			80
250	2,0/1,75	32/40	54
			60
			72
			80
285	2,0/1,70	32/40	60
			72
			80
			100
285	2,0/1,75	32/40	60
			72
			80
			100

Ø	THICKNESS	CENTRAL BORE	TEETH
315	2,5/2,25	32/40/50	60
			72
			80
			100
360	2,6/2,25	40/50	54
			60
			72
			80
425	2,7/2,25	50	60
			72
			80
			100
460	2,7/2,25	50	60
			72
			80
			100

EFFICIENCY

- HSS
- CARBIDE
- CARBIDE + PVD
- CERMET

MATERIAL	PVD	MACHINE	APPLICATION
CERMET	NO	AUTOMATIC/ STATIONARY	● ■



CUTTING TUBES AND PROFILES

PEGASUS

Developed for the cutting of carbon steel tubes in stationary machines, PEGASUS blades prove to be an excellent solution for high performance applications.

Carbide inserts, allied to a PVD coating, provide hardness and toughness ensuring high performance and avoiding cracks or fractures that can occur due to the high impact caused during cutting.

Main Dimensions

Ø	THICKNESS	CENTRAL BORE	TEETH
250	2,0/1,70	32/40	54
			60
			72
			80
250	2,0/1,75	32/40	54
			60
			72
			80
285	2,0/1,70	32/40	60
			72
			80
			100
285	2,0/1,75	32/40	60
			72
			80
			100

Ø	THICKNESS	CENTRAL BORE	TEETH
315	2,5/2,25	32/40/50	60
			72
			80
			100
360	2,6/2,25	40/50	54
			60
			72
			80
425	2,7/2,25	50	60
			72
			80
			100
460	2,7/2,25	50	60
			72
			80
			100

EFFICIENCY

HSS

CARBIDE

CARBIDE + PVD

MATERIAL	PVD	MACHINE	APPLICATION
CARBIDE	YES	AUTOMATIC/ STATIONARY	○ □ △



TUBE FORMING

HERCULES

The manufacture of steel tubes is one of the main sectors of the metalworking industry in the world, the HERCULES line was developed to better serve this market. Focused on improving the cutting process in tube forming machines, the tenacity of its inserts and special geometry guarantee an excellent cutting output.

Main Dimensions

Ø	THICKNESS	CENTRAL BORE	TEETH
400	2,9/2,50	40/50/80	100
			120
			130
			140
450	2,9/2,50	50	100
			120
			140
			150
500	3,8/3,30	50	120
			140
			160

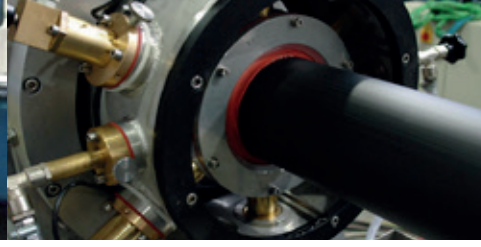
Ø	THICKNESS	CENTRAL BORE	TEETH
550	3,8/3,30	80/90/140	100
			120
			140
			170
560	3,8/3,30	80/90/140	120
			140
			170
600	3,8/3,30	80/90/140	140
			160
			170
			180

*For other dimensions consult our sales team.

EFFICIENCY

- HSS
- CARBIDE
- CARBIDE + PVD

MATERIAL	PVD	MACHINE	APPLICATION
CARBIDE	YES	TUBE FORMING	◯



TUBE FORMING

SCORPIUS

Cutting conduction pipes in forming machines is always a challenge for cutting tools, because the welding excess is removed internally. The SCORPIUS line has been developed to withstand these severe working conditions and its robust design ensures a better performance reducing the risk of breakage.

EFFICIENCY

- HSS
- CARBIDE
- CARBIDE + PVD

Main Dimensions

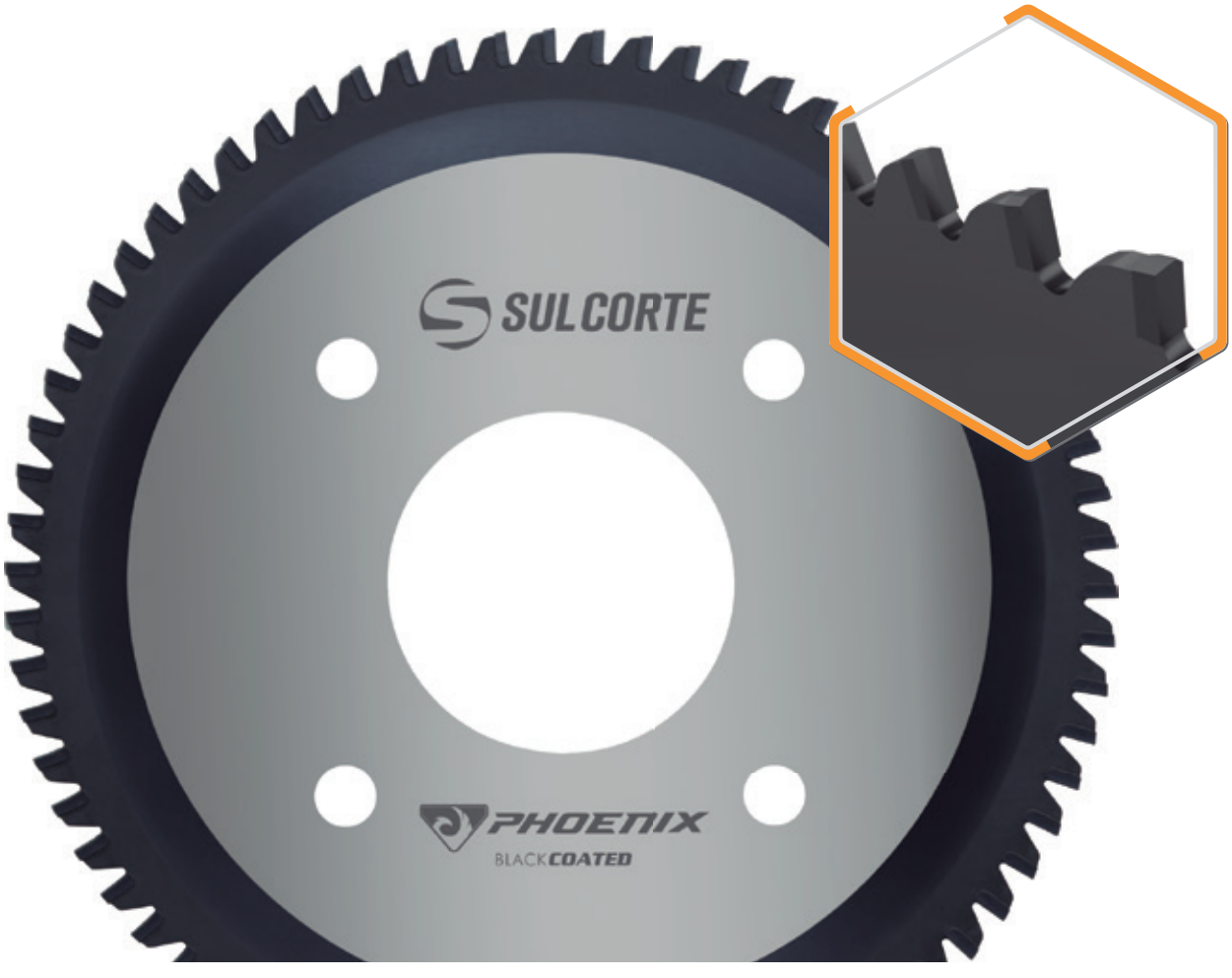
Ø	THICKNESS	CENTRAL BORE	TEETH
400	2,9/2,50	40/50/80	100
			120
			130
			140
450	2,9/2,50	50	100
			120
			140
			150
500	3,8/3,30	50	120
			140
			160

Ø	THICKNESS	CENTRAL BORE	TEETH
550	3,8/3,30	80/90/140	100
			120
			140
			170
560	3,8/3,30	80/90/140	120
			140
			170
600	3,8/3,30	80/90/140	140
			160
			170
			180

*For other dimensions consult our sales team.

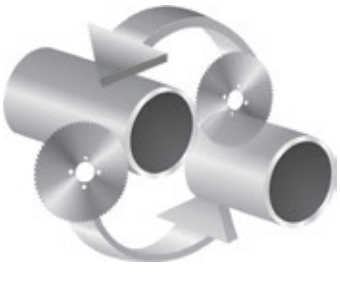
MATERIAL	PVD	MACHINE	APPLICATION
CARBIDE	YES	TUBE FORMING	◯

TUBE FORMING ORBITAL CUTTING



PHOENIX

Orbital cutting machines coupled to pipe forming lines provide some challenges and a high-performance requirement. The PHOENIX range of saws has been developed to overcome these conditions, guaranteeing the best cost benefit to the user. Its stability and cutting precision are the main characteristics of this line.



Main Dimensions

Ø	THICKNESS	CENTRAL BORE	TEETH
355	3,5/2,5	45	64
355	2,9/2,25	45	72
			90
			120
380	3,8/3,0	115	48
			66
500	3,8/3,30	50	120
			140
			160

Ø	THICKNESS	CENTRAL BORE	TEETH
550	3,8/3,30	80/90/140	120
			140
			170
560	3,8/3,30	80/90/140	120
			140
			170
600	3,8/3,30	80/90/140	140
			160
			170
			180

*For other dimensions consult our sales team.

EFFICIENCY

HSS

CARBIDE

CARBIDE + PVD

MATERIAL	PVD	MACHINE	APPLICATION
CARBIDE	YES	TUBE FORMING ORBITAL CUTTING	◯

STAINLESS STEEL CUTTING

CENTAURUS

The CENTAURUS line has the highest technology for the machining of stainless steels. Its special PVD coating extends the tool life and its design guarantees lower cutting stresses, reducing cutting temperatures to avoid material adhesion.

EFFICIENCY

- HSS
- CARBIDE
- CARBIDE + PVD

MATERIAL	PVD	MACHINE	APPLICATION
CARBIDE	YES	AUTOMATIC STATIONARY	●

Main Dimensions

Ø	THICKNESS	CENTRAL BORE	TEETH
250	2,0/1,70	32/40	54
			60
			72
			80
250	2,0/1,75	32/40	54
			60
			72
			80
285	2,0/1,70	32/40	60
			72
			80
			100
285	2,0/1,75	32/40	60
			72
			80
			100

Ø	THICKNESS	CENTRAL BORE	TEETH
315	2,5/2,25	32/40/50	60
			72
			80
			100
360	2,6/2,25	40/50	54
			60
			72
			80
425	2,7/2,25	50	60
			72
			80
			100
460	2,7/2,25	50	60
			72
			80
			100

*For other dimensions consult our sales team.

SPECIAL APPLICATIONS

LUPUS

The LUPUS line has carbide teeth and can be applied to tubes, profiles and solid sections. This line is intended for special applications, where a specific geometry is required.

EFFICIENCY

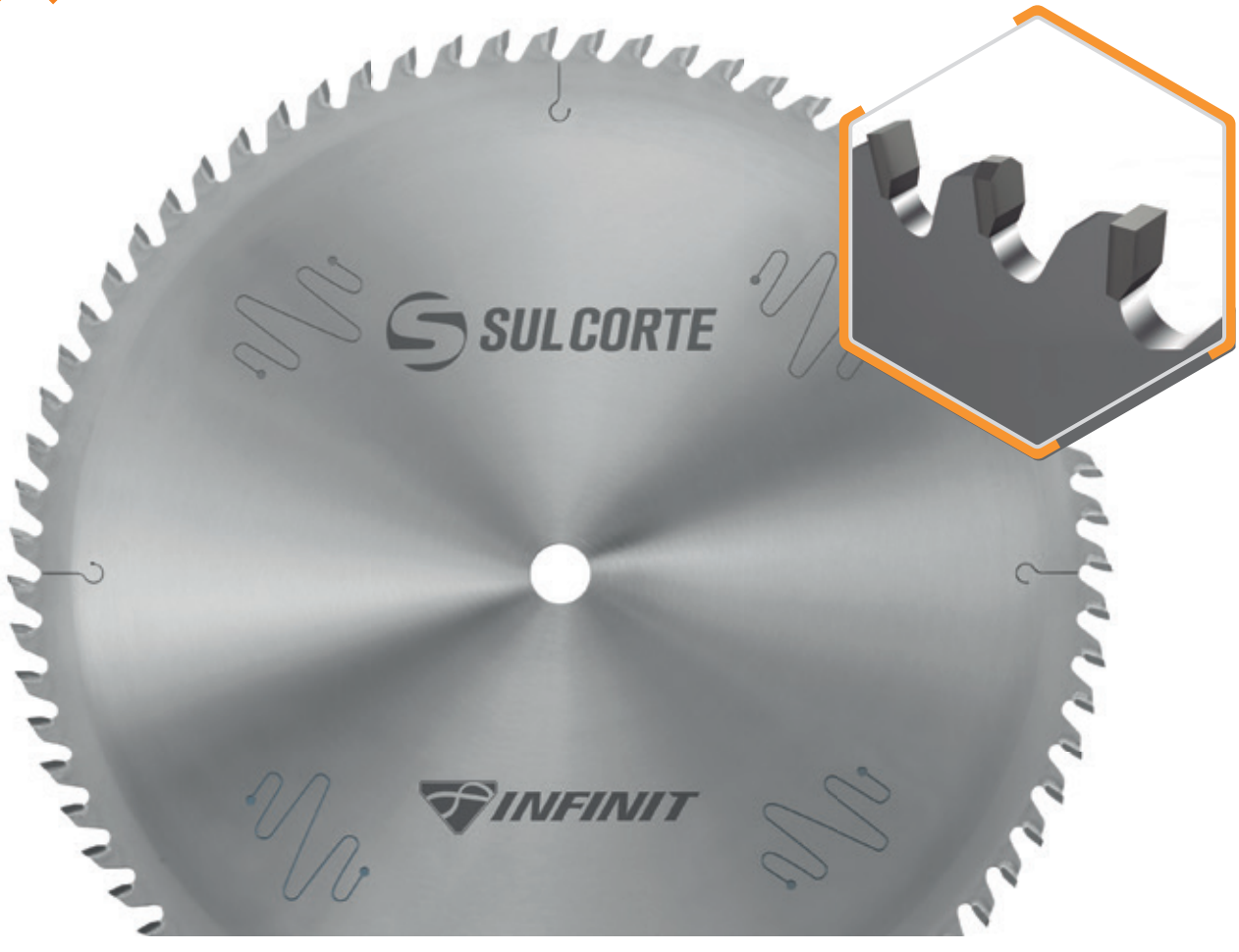
HSS

CARBIDE

CARBIDE + PVD

MATERIAL	PVD	MACHINE	APPLICATION
CARBIDE	YES	AUTOMATIC STATIONARY	○ ● △

APPLICATIONS IN OTHER MATERIALS



INFINIT

Aimed at cutting non-ferrous metals, such as aluminum, copper, brass, plastics and wood, the INFINIT line, with a wide range of carbide grades and geometries, provides a suitable solution for each type of application. We develop the ideal saw blade for each application with agility and quality.

EFFICIENCY

HSS

CARBIDE

MATERIAL	PVD	MACHINE	APPLICATION
CARBIDE	NO	VARIOUS	○ ● △

CUTTING PARAMETERS - SOLIDS

TECHNICAL INFORMATION - COLD SAW			
JIS	AISI	DIN	DIN N°
1. MACHINING STEELS: Vc: 110 ~ 130 m/min; fz: 0,06 ~ 0,08 mm 285: 120~145 RPM / 360: 95~115 RPM / 460: 75~90 RPM			
STKM;STPG;SM;SS	1010;1015;A570	St 34 ~ St 42	1.0032 ~ 1.0042
S10C ~ S20C	1008 ~ 1020	C10 ~ C20	1.0301 ~ 1.0453
SUM21 ~ 25	1212 ~ 1215	9S20 ~ 45S20	1.0711 ~ 1.0736
2. QUENCHED AND TEMPERED STEELS: Vc: 100 ~ 120 m/min; fz: 0,05 ~ 0,07 mm 285: 110~135 RPM / 360: 88~106 RPM / 460: 69~83 R			
S35C ~ S45C	1035 ~ 1046	C35 ~ C45	1.0501;11;03
SS490;SM570	A 572	St 52 ~ St70	1.0050~1.0072
SNCM220	8615;17;20;22	20 NiCrMo 2	1.6522;1.6523
SCM415;SCM420H	4118	15 CrMo 4;20 CrMo 4	1.7262;1.7264
SMnC420H	5115;5120	16 MnCr 5;20 MnCr 5	1.7131;1.7147
3. QUENCHED AND TEMPERED STEELS: Vc: 90 ~ 110 m/min; fz: 0,04 ~ 0,06 mm 285: 100~120 RPM / 360: 80~97 RPM / 460: 62~76 RPM			
S50C ~ S58C	1050;1060	C60	1.0601;1.1203
SNCM447;439;8	4340	34 NiCrMo 6	1.6582;80;65
SNCM440	4140;42	42 CrMo 4	1.7225;23
SACM645	A355CI.D;A	34 CrAlMo 5;41 CrAlMo 7	1.8507;09
		34 CrAlMo 7	1.8550
4. SPRING STEELS: Vc: 80 ~ 100 m/min; fz: 0,04 ~ 0,06 mm 285: 90~113 RPM / 360: 70~88 RPM / 460: 55~69 RPM			
SUP6	9260H	65 Si 7	1.5028
SUP10	6150	50 CrV 4	1.8159
		38 Cr 2	1.7003
SCr435/440	5135;5140	37 Cr 4;41 Cr 4	1.7034
5. TOOL STEELS: Vc: 80 ~ 100 m/min; fz: 0,04 ~ 0,06 mm 285: 90~113 RPM / 360: 70~88 RPM / 460: 55~69 RPM			
		115 CrV 3	12.210
SUJ2	52100	100 Cr 6	1.3505
SK2	W1-12	C 125 W	1.1663
SK3	W1-10	C 105 W1 / C 105 W2	1.1645/1.1545
ISO:P20		40 CrMnMo 7	1.2311
SKH59	M42	S 2-10-1-8	1.3247
SKH3	T4	S 18-1-2-5	1.3255
6. STAINLESS STEELS: Vc: 60 ~ 80 m/min; fz: 0,03 ~ 0,05 mm 285: 67~91 RPM / 360: 53~71 RPM / 460: 41~55 RPM			
SKD61	H13	X 40 CrMoV 5-1	1.2344
SKD11	D2	X 155 CrVMo 12-1	1.2379
SUS304	304	X 5 CrNi 18-10	1.4301
SUS440A/B/C	440A/B/C	X 65 CrMoV 14 / X 90 CrMoV 18 / X 105 CrMo 17	1.4109/12/25
SKD1	D3	X 210 Cr 12	1.2080
SKD12	A2	X 100 CrMoV 5-1	1.2363
SKS2/SKS31	D7	105 WCr 6	1.2419
SKD2		X 210 CrW 12	1.2436
7. HARD CUTTING STEELS: Vc: 40 ~ 70 m/min; fz: 0,03 ~ 0,05 mm 285: 45~80 RPM / 360: 35~62 RPM / 460: 27~48 RPM			
SUS316	316	X 5 CrNiMo 17-12-2	1.4401
SUS317	317	X 3 CrNiMo 18-12-3	1.4449
SUS321	321	X 6 CrNiTi 18-10	1.4541
SUS329J1		X 3 CrNiMo 27-5-2	1.4460
SUS630	630	X 5 CrNiCuNb 17-4	1.4542
SUS309S	309S	X 7 CrNi 23-14	1.4841
SUH310	310	X 15 CrNiSi 25-20	1.4845
SUS310S	310S	X 12 CrNi 25-21	1.4876
SKH51	M2	S 6-5-2	1.3343
SKH52	M3	HS 6-5-3	1.3344
SKH2	T1	S 18-0-1	1.3355

CERMET & CARBIDE TOOTH BLADE FOR SOLID BARS

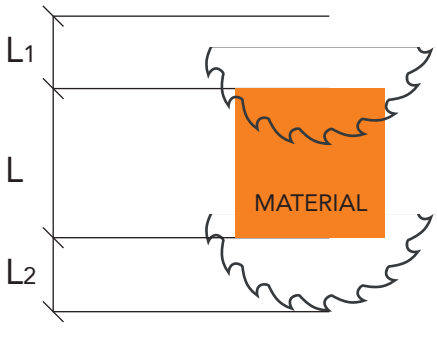
ø Blade	Nz	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150
250	54																													
	60																													
	72																													
	80																													
285	60																													
	72																													
	80																													
360	60																													
	80																													
	100																													
	120																													
420	50																													
	60																													
	80																													
	100																													
460	40																													
	60																													
	80																													

CUTTING PARAMETERS - TUBES

CARBIDE STANDARD TUBE FORMING PARAMETER									
		ST37				ST52			
Ø Tube	Wallthickness	Blade Speed (m/min)		Feed/Tooth (mm/z)		Blade Speed (m/min)		Feed/Tooth (mm/z)	
25	2 - 3	210	380	0,06	0,12	80	135	0,07	0,09
	3 <	210	370	0,06	0,12	80	135	0,06	0,09
50	2 - 3	200	360	0,045	0,11	80	130	0,05	0,09
	2 - 3	190	340	0,06	0,11	80	130	0,05	0,08
75	2 - 3	190	340	0,045	0,11	80	125	0,04	0,08
	3 <	190	320	0,045	0,09	80	125	0,05	0,08
Hard Steel < 1200 N/mm2						Stainless Steel			
25	2 - 3	90	140	0,045	0,09	36	120	0,03	0,05
	2 - 3	90	130	0,045	0,09	36	115	0,04	0,07
50	2 - 3	90	130	0,03	0,075	34	110	0,04	0,07
	3 <	80	120	0,03	0,075	34	120	0,05	0,08
75	2 - 3	80	120	0,03	0,075	34	115	0,04	0,07
	3 <	80	120	0,03	0,075	32	110	0,04	0,07

CARBIDE ORBITAL CUTTING				
Blade	CARBIDE			
Wall thickness	> 2,0 mm < 7 mm		< 7 mm	
Materials	Speed (m/min)	Feed Rate (mm)	Speed (m/min)	Feed Rate (mm)
Mild Steel < 500 N/mm²	250 - 400	0,05 - 0,12	200 - 350	0,05 - 0,1
Carbon Steel 500 - 750 N/mm²	200 - 350	0,05 - 0,12	150 - 300	0,05 - 0,09
Alloyed Steel 750 - 950 N/mm²	150 - 300	0,05 - 0,09	100 - 250	0,05 - 0,08
High Tension Steel 950 - 1200 N/mm²	80 - 160	0,05 - 0,09	70 - 150	0,05 - 0,08
Tool Steel > 950 N/mm²	70 - 90	0,04 - 0,07	60 - 80	0,03 - 0,06
Austenitic Stainless Steel 500 - 800 N/mm²	40 - 90	0,04 - 0,07	50 - 70	0,04 - 0,06
Ferritic Stainless Steel 400 - 700 N/mm²	60 - 110	0,05 - 0,08	60 - 90	0,05 - 0,07

FORMULAS



RPM: Rotation per minute
Vc: Cutting speed (m/min)
D: Diameter of the blade (mm)
Av: Feed speed (mm/min)
Az: Feed per tooth (mm)
Z: Number of teeth
T: Contact time / piece (s)
L: Dimensions of the piece (if round L=D) (mm)
T: Total cutting time (s)

1 - RPM	2 - FEED SPEED	3 - CONTACT TIME / PIECE	4 - TOTAL CUTTING TIME
$RPM = \frac{Vc \times 1000}{D \times 3,14}$	$Av = AZ \times Z \times RPM$	$T_1 = \frac{L \times 60}{Av}$	$T_2 = \frac{(L_1 + L + L_2) \times 60}{Av}$

Scan me

GAUTHAMA

SULCORTE

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