ANDOR ANDOR ANDOR ANDOR ANDOR

SUPERIOR PERFORMANCE TUNGSTEN CARBIDE BURRS

for high speed machines

ANDOR®

THE INTELLIGENT CHOICE

ON THE CUTTING EDGE OF TECHNOLOGY

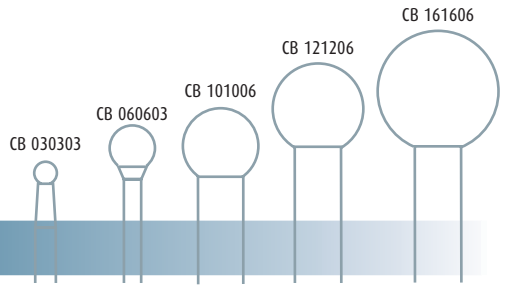
Grinding Techniques (Pty) Ltd.

ISO 9001

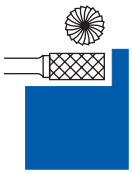
BALL

CUTTING SHAPE	REFERENCE	CUTTER DIA.	LENGTH OF CUT	SHANK DIA.	OVERALL LENGTH
	CB 030303	3	2.4	3	38
	CB 030306	3	2.4	6	50
	CB 060603	6	5.5	3	43
	CB 060606	6	5.5	6	50
	CB 080806	8	6	6	50
	CB 101006	10	9	6	53
	CB 121206	12	10	6	54
	CB 161606	16	14	6	58
	CB 191906	19	17	6	62

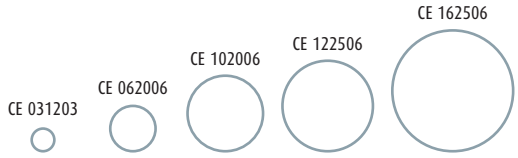
POPULAR SIZES (Full Scale/mm)



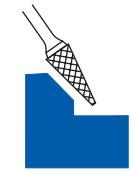
CYLINDRICAL END CUT



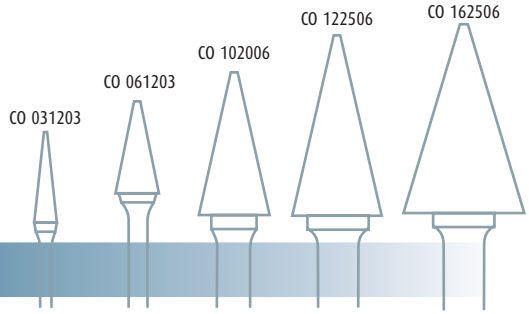
	CE 031203	3	12	3	38
	CE 031218	3.2	12	3.2	38
	CE 062006	6	20	6	50
	CE 082006	8	20	6	64
	CE 102006	10	20	6	64
	CE 122506	12	25	6	69
	CE 162506	16	25	6	69



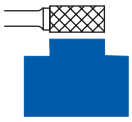
CONE



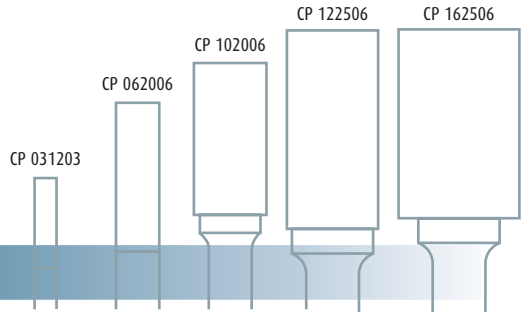
	CO 031203	3	12	3	38
	CO 031603	3	16	3	38
	CO 061203	6	12	3	50
	CO 062506	6	25	6	50
	CO 102006	10	20	6	64
	CO 122506	12	25	6	69
	CO 162506	16	25	6	69



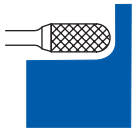
CYLINDRICAL



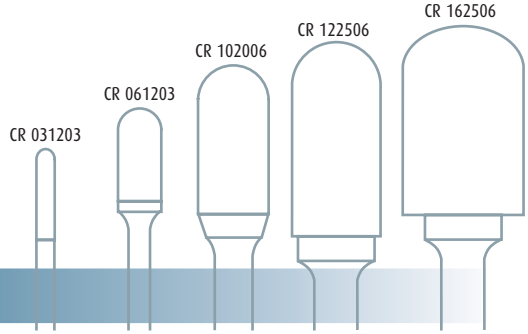
	CP 031203	3	12	3	38
	CP 062006	6	20	6	50
	CP 082006	8	20	6	64
	CP 102006	10	20	6	64
	CP 122506	12	25	6	69
	CP 162506	16	25	6	69
	CP 162508	16	25	8	69



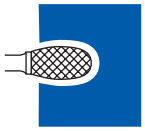
CYLINDRICAL BALL NOSE



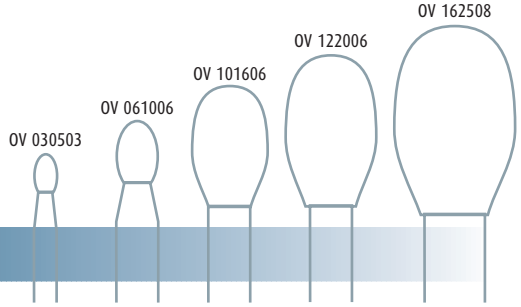
	CR 020603	2	6	3	38
	CR 031203	3	12	3	38
	CR 061203	6	12	3	50
	CR 061606	6	16	6	50
	CR 062006	6	20	6	50
	CR 082006	8	20	6	64
	CR 102006	10	20	6	64
	CR 122506	12	25	6	69
	CR 162506	16	25	6	69



OVAL



	OV 030503	3	5	3	38
	OV 061006	6	10	6	50
	OV 101606	10	16	6	60
	OV 122006	12	20	6	66
	OV 162506	16	25	6	69
	OV 162508	16	25	8	69



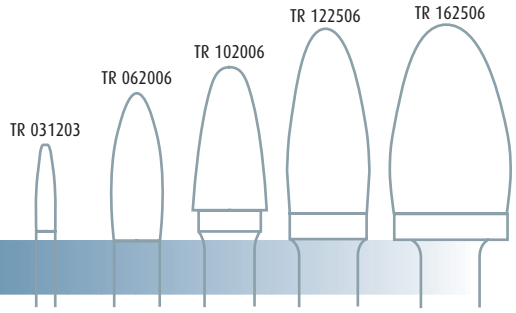
Other sizes and shank styles (Shank Diameters, Long Shanks, Flexible Shanks) available on request

I O N C H A R T

ANDOR TUNGSTEN CARBIDE BURRS

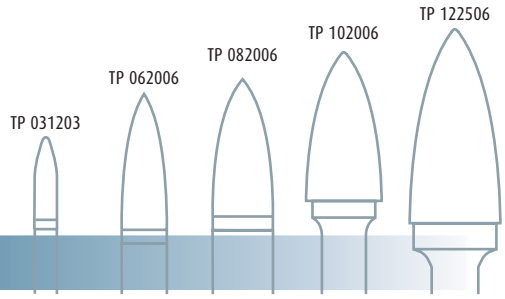
ROUND TREE

REFERENCE	CUTTER DIA.	LENGTH OF CUT	SHANK DIA.	OVERALL LENGTH
TR 031203	3	12	3	38
TR 061203	6	12	3	50
TR 062006	6	20	6	50
TR 102006	10	20	6	63
TR 122506	12	25	6	69
TR 162508	16	25	6	69

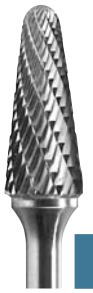


POINTED TREE

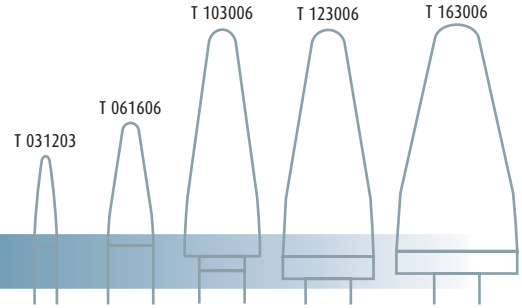
REFERENCE	CUTTER DIA.	LENGTH OF CUT	SHANK DIA.	OVERALL LENGTH
TP 031203	3	12	3	38
TP 061203	6	12	3	50
TP 062006	6	20	6	50
TP 082006	8	20	6	63
TP 102006	10	20	6	64
TP 122506	12	25	6	69
TP 202506	20	25	6	69



BALL NOSE 14° including angle

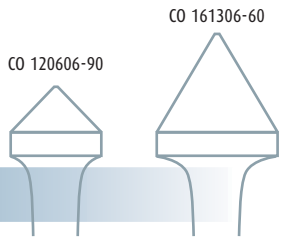


REFERENCE	CUTTER DIA.	LENGTH OF CUT	SHANK DIA.	OVERALL LENGTH
T 031203	3	12	3	38
T 061606	6	16	6	50
T 103006	10	27	6	71
T 123006	12	30	6	74
T 163008	16	30	6	74



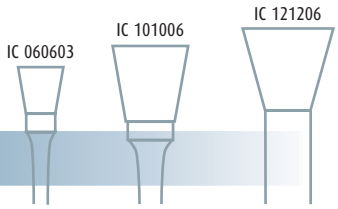
COUNTERSINK

REFERENCE	CUTTER DIA.	LENGTH OF CUT	SHANK DIA.	OVERALL LENGTH
CO 120606-90	12	6	6	53
CO 160806-90	16	8	6	56
CO 121006-60	12	10	6	58
CO 161306-60	16	13	6	61



INVERTED CONE-END

REFERENCE	CUTTER DIA.	LENGTH OF CUT	SHANK DIA.	OVERALL LENGTH
IC 060603	6	6	3	44
IC 101006	10	10	6	53
IC 121206	12	12	6	56



RECOMMENDED CUTTING SPEEDS: DOUBLE CUT STYLE BURRS

STEEL & STEEL CASTINGS:

Non-hardened, non-heat treated steels up to 35 HRC	450 - 600 m/min
Hardened, heat treated steels over 35 HRC	250 - 350 m/min
Stainless Steels	250 - 350 m/min

HARDENED NON-FERROUS METALS:
(Bronze, Titanium, Hard Aluminium)

Coarse machining (High stock removal)	250 - 350 m/min
Fine machining (Deburring etc)	350 - 450 m/min
Nickle based alloys	300 - 450 m/min
Cast Iron	450 - 600 m/min

RECOMMENDED CUTTING SPEEDS: ALU CUT STYLE BURRS

SOFT NON-FERROUS METALS:
(Brass, Copper, Zinc, Aluminium Alloys)

Coarse machining (High stock removal)	600 - 900 m/min
Fine machining (Deburring etc)	800 - 900 m/min

PLASTICS:
(Fibre Reinforced Plastics, Thermoplastics, Hard Rubber)

Coarse mchining (High stock removal)	500 - 900 m/min
Fine machining (deburring etc)	500 - 900 m/min

CONVERSION CHART - meters per minute (m/min) to revolutions per minute (RPM)

Burr dia.	2	3	4	6	8	10	12	16	20
m/min	R P M								
250	39773	26515	19886	13258	9943	7955	6629	4972	3977
300	47727	31818	23864	15909	11932	9545	7955	5966	4773
350	55682	37121	27841	18561	13920	11136	9280	6960	5568
450	71591	47727	35795	23864	17898	14318	11932	8949	7159
500	79545	53030	39773	26515	19886	15909	13258	9943	7955
600	95455	63636	47727	31818	23864	19091	15909	11932	9545
900	143182	95455	71591	47727	35795	28636	23864	17898	14318

ON THE CUTTING EDGE OF TECHNOLOGY
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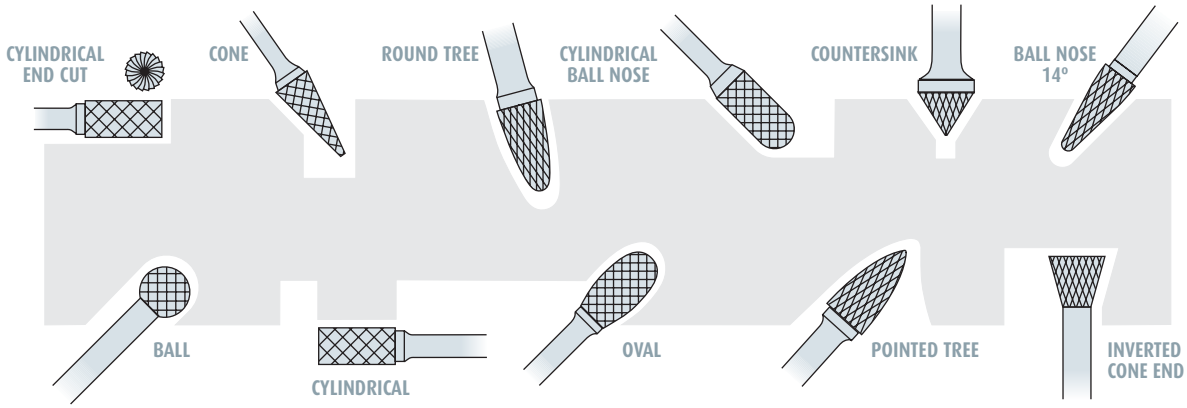
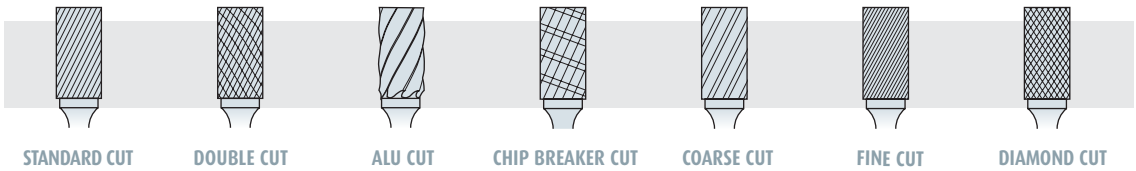
BURR SHAPE SELECTION

Select the shape which conforms to your workpiece. Maximise the area of contact between the tool and material. Having more of the cutting edge engaged in the material will improve the part finish.



CUTTING STYLE SELECTION

The choice of flute cut style is dependant on the type of material being machined, the amount of stock removal, and the finish required. In general, the harder the material being machined, the finer the cut should be.



It is also essential that adequate power and operating speed of the drive is used to ensure optimum performance and tool life, machine collets must be absolutely concentric to avoid chipping, and any tool runout will result in chatter and premature wear. Suitable lubricants (grease, paraffin, chalk, etc.) can be used to ease loading problems when machining soft materials.

The Double Cut fluting style can be used almost universally, and allows for rapid stock removal when machining the harder materials. This chisel tooth pattern not only minimizes tool chatter, but also reduces the chip to a granular shape in most materials, thereby reducing or eliminating the sharp sliver chips the are normally experienced. This chip reduction also helps to eliminate loading of the flutes. An improvement in tool control will be realized as the Double Cut tends to reduce the pulling action of the main flute pattern; operator fatigue is also lessened. Although some finish reduction may be experienced, improvement in material removal (and, therefore, increased production) will be realized.

For these reasons, Grinding Techniques (Pty) Ltd. stocks mainly Double Cut style burrs, although some sizes are also stocked in Standard Cut and Alu Cut, other flute styles are available ex-manufacture.

Only the finest materials, flute designs, and production methods are used in the manufacture of Andor Tungsten Carbide Burrs. Coupled with reasonable pricing and the company emphasis on providing superior customer service,this results in another genuine "value for money" product line from Grinding Techniques (Pty) Ltd.

Grinding Techniques (Pty) Ltd.

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