PARAGON TOOLS

DENTAL MILLING TOOLS


Designed to perform,
built to last.

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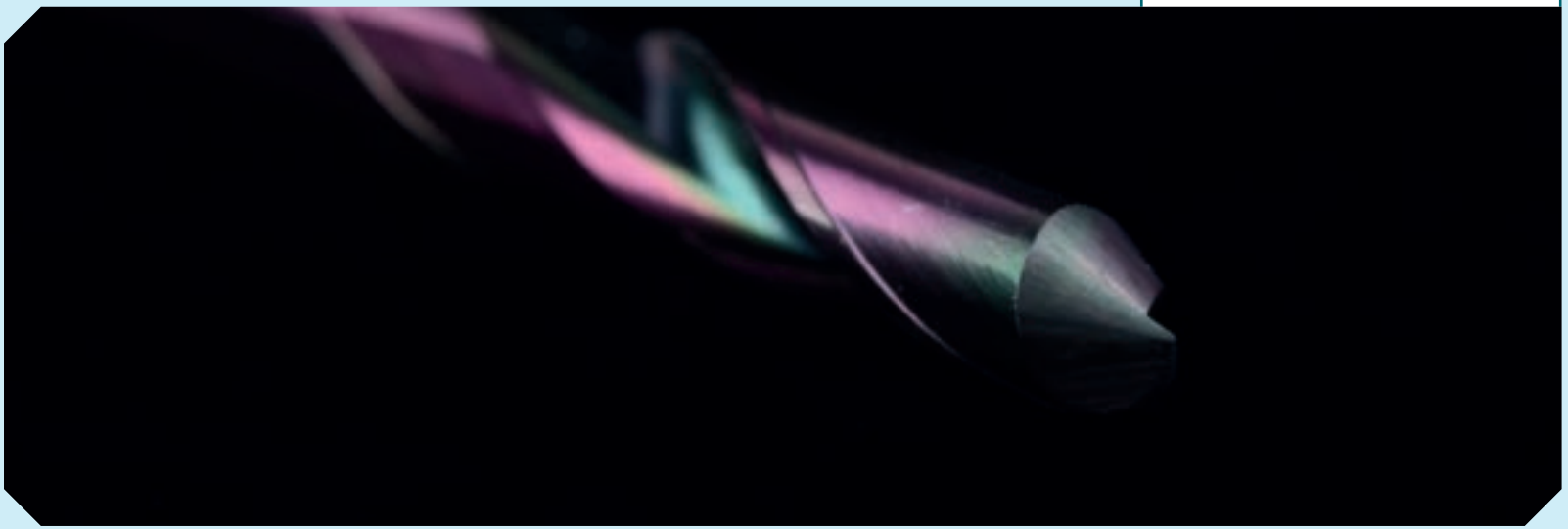
00. About us

Lately, the popularisation of CAD/CAM technology in the field of dental prostheses has led to the appearance of new materials which pose a challenge for milling tools.

Paragon Tools was founded to set the standard in high performance dental burs that optimise results in laboratories and milling centres.

Working together with engineers experienced in designing cutting tools, CAD/CAM milling specialists and coating experts, **we have created burs which are specially adapted to the materials used in the sector,** providing unrivalled durability, precision and cutting speeds.

INNOVATIVE SME



Geometries

Flat.	Ball end.	Bull nose.	Threading.	Varioaxis®
				

Number of flutes

Grinding.	01.	02.	03.	04.
				

Coatings

TISI +	DED	DLC	Nano Diamond
			

Cooling

Wet Milling	Dry Milling
	

TECHNOLOGY

Paragon Tools uses the most advanced coatings, optimised to give maximum performance with any material, from polymers to CoCr alloys.

01.

01.1 PRECISION:

Paragon Tools dental burs are designed to give the most accurate results in milling. Ultra-fine grade WC (0.2µm), state-ofthe-art production technology and strict checking of dimensions ensure accurate results for longer.

01.2 GEOMETRIES:

BALL END

Specifically designed for machining organic shapes, available with different coatings and shapes for optimum performance on different materials.

FLAT

Specially designed for a perfect finish on screw seatings and implant connections. The PerfoEdge side design gives the tools a significantly longer lifespan

BULL NOSE

Designed to give the tools a long lifespan, even for high-performance roughing jobs. The TiSi+ coating enables the milling of CoCr and titanium alloys.

BALL END		
Type		Tolerances
Zirconia		R ±5µm
PMMA		R ±5µm
CoCr-Ti	R< 1	R ±0,2µm
	R<R<2	R ±0,3µm
	2<R	R ±0,3µm

FLAT		
CoCr-Ti		R ±5µm

THREADING

With their reinforced cutting teeth and TiSi+ coating, Paragon threading tools are designed to achieve faster milling, with greater precision and a longer lifespan even on complex materials.

VARIOAXIS®

The Paragon Tools T-Slots are the most advanced tools specifically designed for milling angled seatings and space for the screw in direct implant prostheses with angled channels.

01.3 COATINGS:

NANO DIAMOND
Unrivalled performance

With their multilayer diamond coating of up to 15 microns, Paragon Nano Diamond tools last far longer than market standards.

The Paragon Nano Diamond burs are intended for milling highly abrasive materials such as carbon fibre, fibreglass, nanocomposites, hybrid ceramics, pre-sintered CoCr alloys and zirconium.

The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 900% compared with uncoated tools.

COATING PROPERTIES	
Composition	C sp3
Colour	Matte Black
Hardness	10000 HV0,05
Coefficient of friction	0,15
Thickness	15µm
Max. temp. for use	700° C

DIAMOND-LIKE-CARBON
Impressive results on difficult materials

The popularisation in the dental sector of complex machining materials such as PEEK or certain polymers has forced the redesign of burs to enable chip removal, to prevent the material from heating up and to avoid the burs breaking.

The combination of burs with sharper cutting edges, fewer teeth and DLC coating has meant a revolution in the milling of polymers: the DLC's low coefficient of friction enables much higher machining speeds and keeps the cutting edge sharp for longer, resulting in better performance and surface finishing.

COATING PROPERTIES	
Composition	ta- C
Colour	Glossy Grey
Hardness	5300 HV0,05
Coefficient of friction	0,12
Thickness	1-2µm
Max. temp. for use	500° C

TiSi+

Maximum productivity in CoCr and titanium milling

TiSi+ is a silicon nitride matrix into which nanocrystals of titanium aluminum nitride are deposited, forming a very hard nanocomposite ceramic coating.

TiSi+ coated tools are extremely resistant to wear and oxidation, allowing high machining speeds without the need for liquid cooling. Even the machining of complex alloys of titanium, nickel and CoCr is easy when using TiSi+ coated tools.

COATING PROPERTIES	
Composition	TiAlSin
Colour	Iridescent Blue / Green
Hardness	4000 HV0,05
Coefficient of friction	0,5
Thickness	4µm
Max. temp. for use	1100º C

DED

Optimised for Lithium Disilicate and Ceramics

The DED coating is formed by a layer of synthetic diamond crystals adhered by electrodeposition.

The tools are made with optimised grain for lithium disilicate and glass ceramics which extends their lifespan and produces exceptional surface results.

01.4

varioaxis®

by PARAGON TOOLS

TISI +

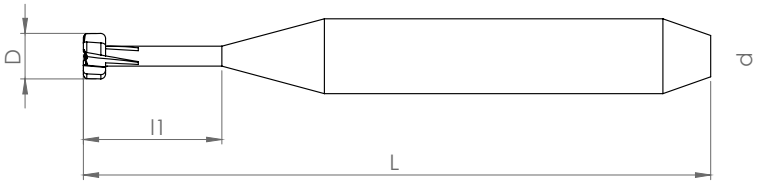
The first all in one solution for milling angled screw channels on implant level restorations simply, easily and efficiently. All with just three tools to cover all implant connections, and a CAD library with nominal connections and morphologies ready for milling.

With the Varioaxis® system, dental laboratories with open CAD/CAM systems will be able to solve complex cases in the most effective, simple and practical way, without the need of CAM knowledge or experience.

AN ALL IN ONE SOLUTION FOR MILLING ANGELED SCREW CHANNELS DEVELOPED BY EXPERTS IN MANUFACTURING HIGH-PERFORMANCE DENTAL MILLING TOOLS.

With their reinforced cutting teeth and TiSi+ coating, the Varioaxis® tools are designed to achieve faster milling, with greater precision and a longer lifespan even on complex materials.

Uses: Milling of undercuts and angled channel screw seatings in Titanium, CoCr, pre-sinter CoCr PMMA, PEEK, Wax

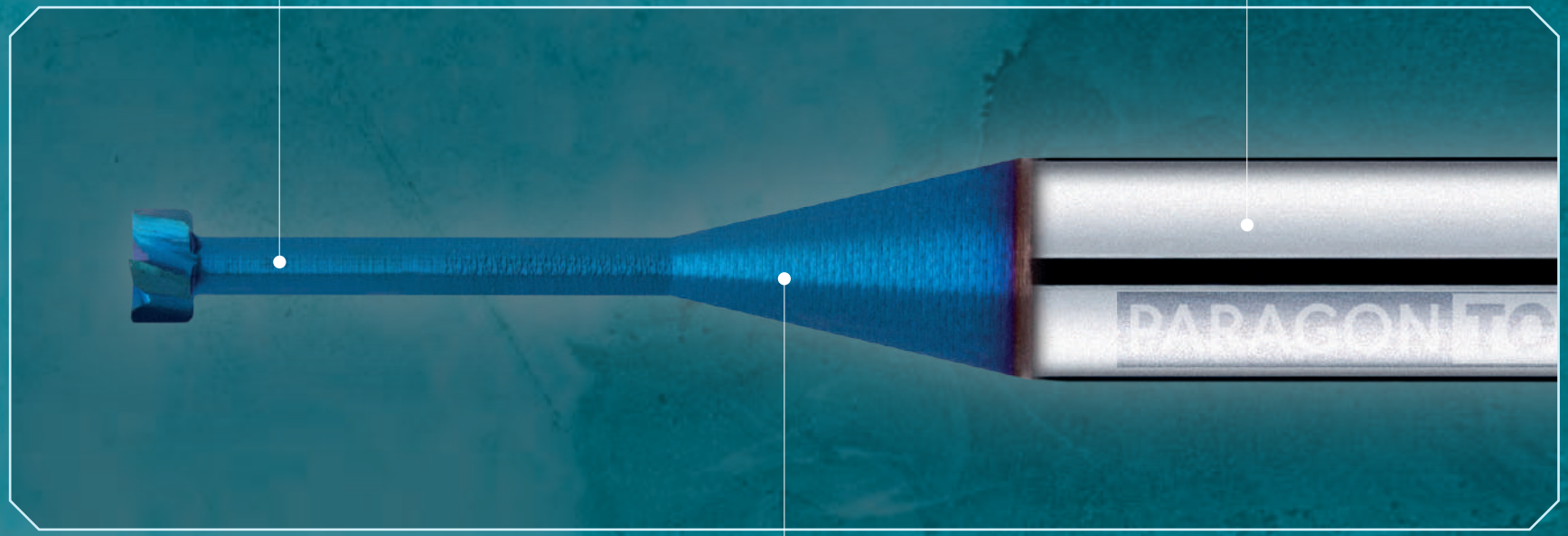


+ SIMPLE

Only 3 tools are needed for milling angled screw channels in any implant connection.

+ PRACTICAL

Implant-level CAD libraries with nominal dimensions and millable morphologies. Ready to launch to CAM software.



+ EFFECTIVE

Its cutting edge radius and nanocomposite ceramic TiSi+ coating provide less wear even when milling complex alloys.

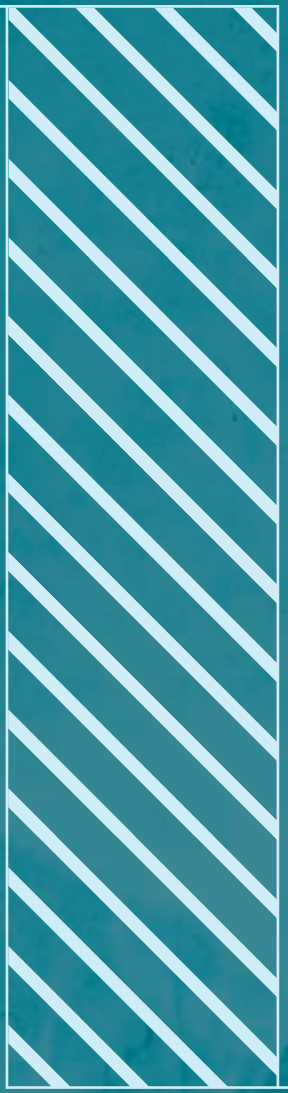
01.5

Variohelix

Dealing with Titanium and CoCr alloys can be challenging. Number one rule is to avoid chattering and vibration by using rigid set-ups. Unfortunately, dental mills are far away to have the rigidity required. In addition, dental mills do not perform well when high torque at low spindle speed is required.

For that reason Paragon Tools has developed Variohelix tools, the first tools with variable and assimetrical helix designed for dental mills.
Variohelix tools have been designed with variable high helix angles and asymmetrical pitch that will break harmonics. High helix angle results in less lateral forces (30% reduction vs standard helix) on the tool, reducing the chattering, noise, vibration and spindle power required.

Variohelix design results in a predictable milling, better surface finishing and increased tools life.



COBALT CHROME DENTAL ALLOY MILLING

Cobalt Chrome is a superalloy known for its unique characteristhics, biocompatibility and hardness, making it a great choice as a dental restoration material. Is considered a difficult-to-cut material due to its high hardness, corrosion resistance, high melting point, and remarkable strength at high temperatures.

The challenges

- There are several factors that make milling dental cobalt chrome alloys a challenge:
- It is extremely abrasive for the tools, causing the tools to dull, dramatically reducing tool life. In addition, this alloy has an average hardness of 40 to 50HRC; however, it presents abrasive intermetallic compounds that create hard spots with up to 60HRC.
- It has a very low thermal conductivity, the heat generated during the milling process concentrates in the cutting edge, instead of the workpiece or chip, resulting in very high temperatures in the cutting tool.
- CoCr alloys work-harden when machined, increasing even more the tool wear.
- The chemical reactivity of these alloys facilitates formation of built-up edge and coating delamination, which damages the cutting tool leading to poor tool life.

Solutions

- A positive rank angle, very sharp cutting edge and specific cutting profiles will help to reduce work-harden, if we add to the equation temperature resistant with low chemical
- reactivity coatings, performance of the tools will improve significantly.

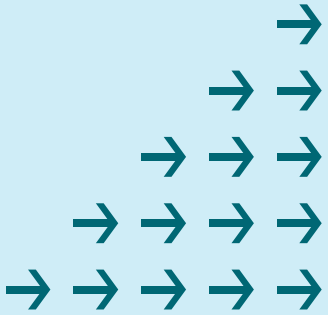
  Tools with geometries that facilitate evacuation, will reduce chip re-cutting therefore improving milling efficiency.
- Avoid chattering at all cost by using high helix angle, minimize harmonics by using asymmetrical helix.
- Appropriate cooling at the cutting edge, minimizing tool projections as much as possible, and using a rigid fixture setup on the machine.
- Optimized cutting conditions and tool paths that ensure continuous load, enough penetration to tackle work hardening.

TITANIUM ALLOY MILLING

It has metallurgical characteristics and material properties that affect the cutting action more severely than other metals - such as cast iron and stainless steel - and make it difficult to machine.

Titanium it has the highest strength-to-weight ratio of any metal, and it has a relatively low modulus of elasticity, however It has metallurgical characteristics and material properties that affect the cutting action more severely than other metals, as Cobalt Chrome alloys, it is considered a difficult to machine.

Milling titanium alloys can be quite challenging. With all of its attributes, titanium is also a poor conductor of heat and has a tendency to acquire surface damage when certain machining techniques are used.



The challenges

- The main challenge with machining titanium is dealing with heat.
- Titanium is a tough material with and the potential for heat from friction is huge. It also doesn't conduct heat well, so the heat, as happens with CoCr, concentrates in the cut zone and it doesn't dissipate easily.
- Titanium milling tends to generate long chips that remain in the cutting area, leading to re-cutting and increasing heating.
- Titanium alloys have a high chemical reactivity, using unsuitable coating will lead to premature wear.
- Another challenge shared with Cobalt alloys is that titanium also work-hardens, the hotter it becomes when cutting it, the harder it becomes to cut.

The challenges

- Use high helix angles, it will facilitate chip removal, improve surface finish and make the tools last significantly longer.
- Avoid vibration and chattering and avoid harmonics by using rigid set-ups.
- Appropriate cooling at the cutting edge, minimizing tool projections as much as possible, and using a rigid fixture setup on the machine.
- Use higher number of flutes and suitable coatings.

PMMA, POLIMERS

The design and selection of tools for the milling of polymers in dentistry is a real challenge. Based on prior experience, dental technicians specialised in CAD/CAM consider polymers to be easy-to-mill materials; however, they have a series of characteristics that make them especially complex and choosing the correct cutting tool is essential.

What makes polymers so special?

They have two main characteristics: tolerance to temperature and to thermal expansion. As such, the amount of heat generated must be considered in the machining of plastics. The main objective is to reduce the heat in the cutting area and eliminate that heat from the area of contact between the tool and the piece as quickly and efficiently as possible, to avoid the melting or soldering of the chip.

The melting temperatures of polymers used in dentistry range from 160ºC for PMMA to 334ºC for PEEK. When we are using materials with low melting points, the best solution in terms of tool selection is to use burs with a single cutting edge. Burs of this type have deeper grooves to allow the removal of larger chips. This larger chip allows more heat to be removed from the material without melting it, allowing higher working speeds, and avoiding irregular finishes due to material melting on the cutting surface. Working at lower temperatures has another additional advantage: it reduces the expansion of the plastic during the process, ensuring better manufacturing tolerances.

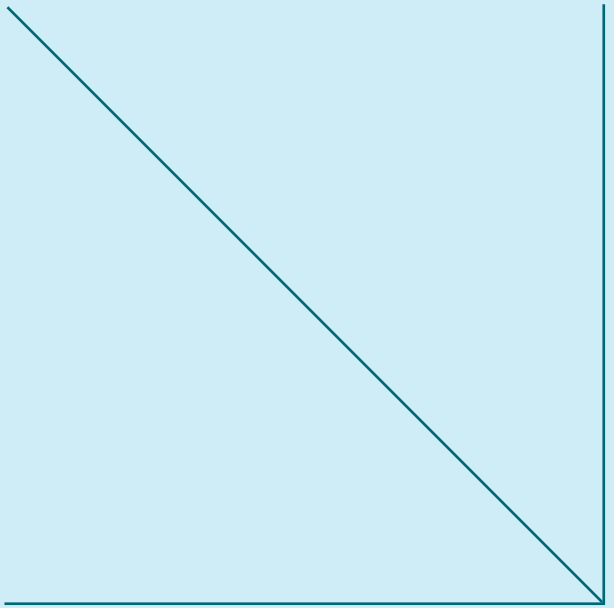
At Paragon Tools we have designed a line of high-performance tools specifically created for the machining of polymers which minimize the generation of heat during machining. A Low friction DLC coating has been applied to our micro-grain tungsten carbide tools, significantly reducing the coefficient of friction, minimizing wear by keeping the tool sharp for longer and reducing the adhesion of the polymer to the tool, which is so often the cause of it breaking.

MILLING TOOLS

02.

02.1

By System



By System:

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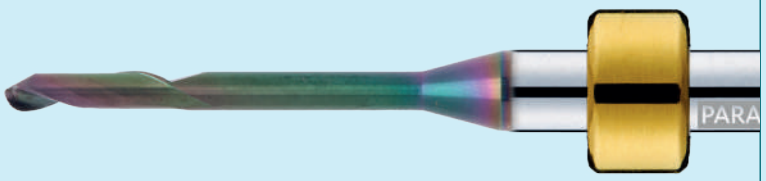
YENADENT®

PMMA, PEEK

DLC

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.



Reference	d	D	l1
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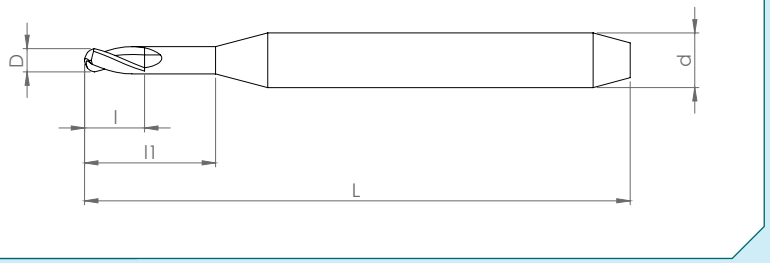
C450-1YB0614	4	0,6	14
C450-1YB1016	4	1	16
C450-1YB2020	4	2	20

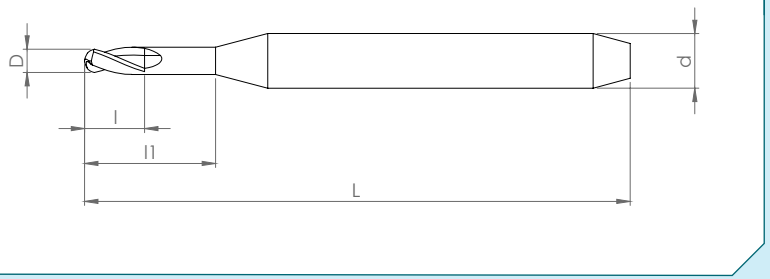


ZIRCONIA

A better performance thanks to their helix shape and diamond coating. The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 9 times more than uncoated tools.

Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.

Reference	d	D	l1
D450-2YB0606	4	0,6	6
D450-2YB0610	4	0,6	10
D450-2YB1016	4	1	16
D450-2YB2020	4	2	20



TITANIUM, CoCr

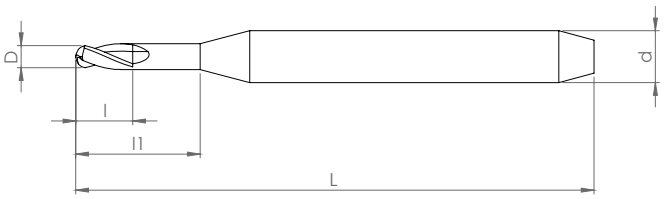
TISI +

Designed for maximum productivity with CoCr and titanium.
The combination of high helix angle with TiSi+ coating enables exceptional durability and cutting speeds even in dry milling. Optimised for machining complex titanium, nickel and CoCr alloys.

Uses: CoCr, Titanium alloys, Nickel alloys, Pre-sintered CoCr

Reference	d	D	l1	Z
T450-2YB0604	4	0,6	4	2
T450-3YB1008	4	1	8	3
T450-3YB1512	4	1.5	12	3
T450-3YB2012	4	2	12	3
T450-3YB2016	4	2	16	3
T450-3YB3012	4	3	12	3

Reference	d	D	l1	Z
T440-3YF0503	4	0,5	3	3
T445-3YF1408	4	1	5	3
T445-3YF1408	4	1,4	8	3
T445-3YB1508	4	1,5	8	3
T450-3YF1810	4	1,8	10	3



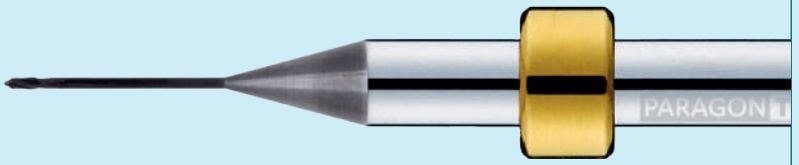
Reference	d	D	R	l1	Z
T445-2YT201008	4	1	0,2	8	2
T450-4YT201512	4	1,5	0,2	12	4
T450-4T201516	4	1,5	0,2	16	4

FLAT MULTIPURPOSE

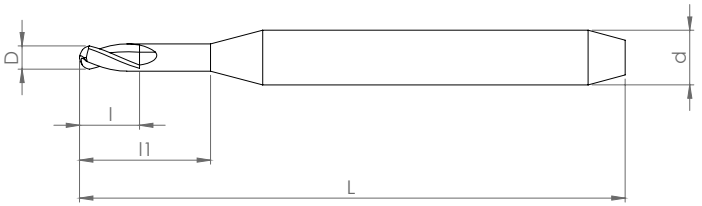
TISI +

Multi-purpose tools with reinforced flank and high helix angle.
Designed for maximum productivity and excellent lifespan working with multiple materials.

Uses: CoCr, Titanium alloys, Zirconia, PEEK, Pre-sintered CoCr.



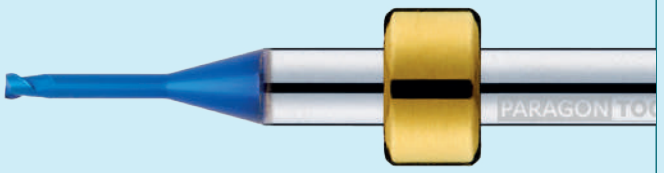
Reference	d	D	l1
T450-3YF1416	4	1,4	16
T450-3YF1818	4	1,8	18



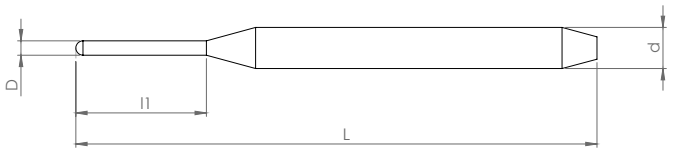
HYBRID CERAMICS

Excellent results in dry milling of nanocomposites and hybrid ceramics. With their Nano Diamond coating, exceptionally long-lasting results are achieved on highly abrasive materials.

Uses: Hybrid ceramics, Nanocomposites.



Reference	d	D	l1
D445-2YB0608	4	0,6	8
D450-2YB1010	4	1	10
D450-2YB2016	4	2	16

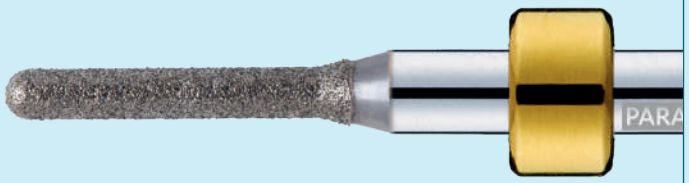


GLASS CERAMICS

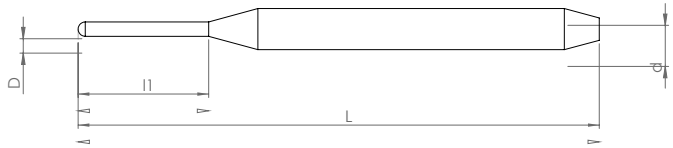
DED

Designed to give maximum performance in the manufacture of vitreous ceramics fillings. DED coating with optimised grain size and maximum adhesión.

Uses: Glass Ceramics, Lithium disilicate, Lithium Disilicate.



Reference	d	D	l1
G450-0YB05TA	4	0,5	Tapered
G450-0YB0606	4	0,6	6
G450-0YB1010	4	1	10
G450-0YB1508	4	1,5	8
G445-0YB2015	4	2,5	15
G450-0YB2515	4	2,5	15

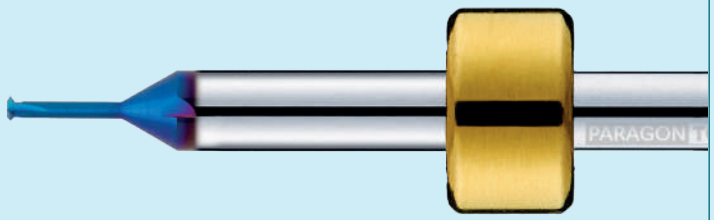


THREADING

TISI +

With their reinforced cutting teeth and TiSi+ coating, the Paragon threading tools are designed to achieve faster milling, with greater precision and a longer lifespan even on complex materials. Milling of metric screw threads in titanium alloys

Uses: Metric threading on Titanium alloys and other materials.



Reference	d	D	l1
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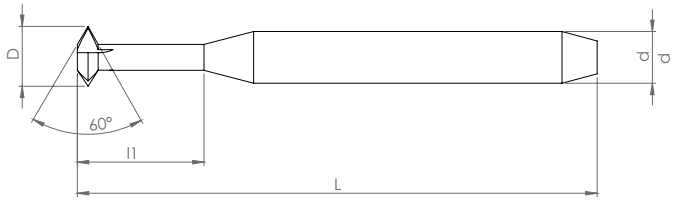
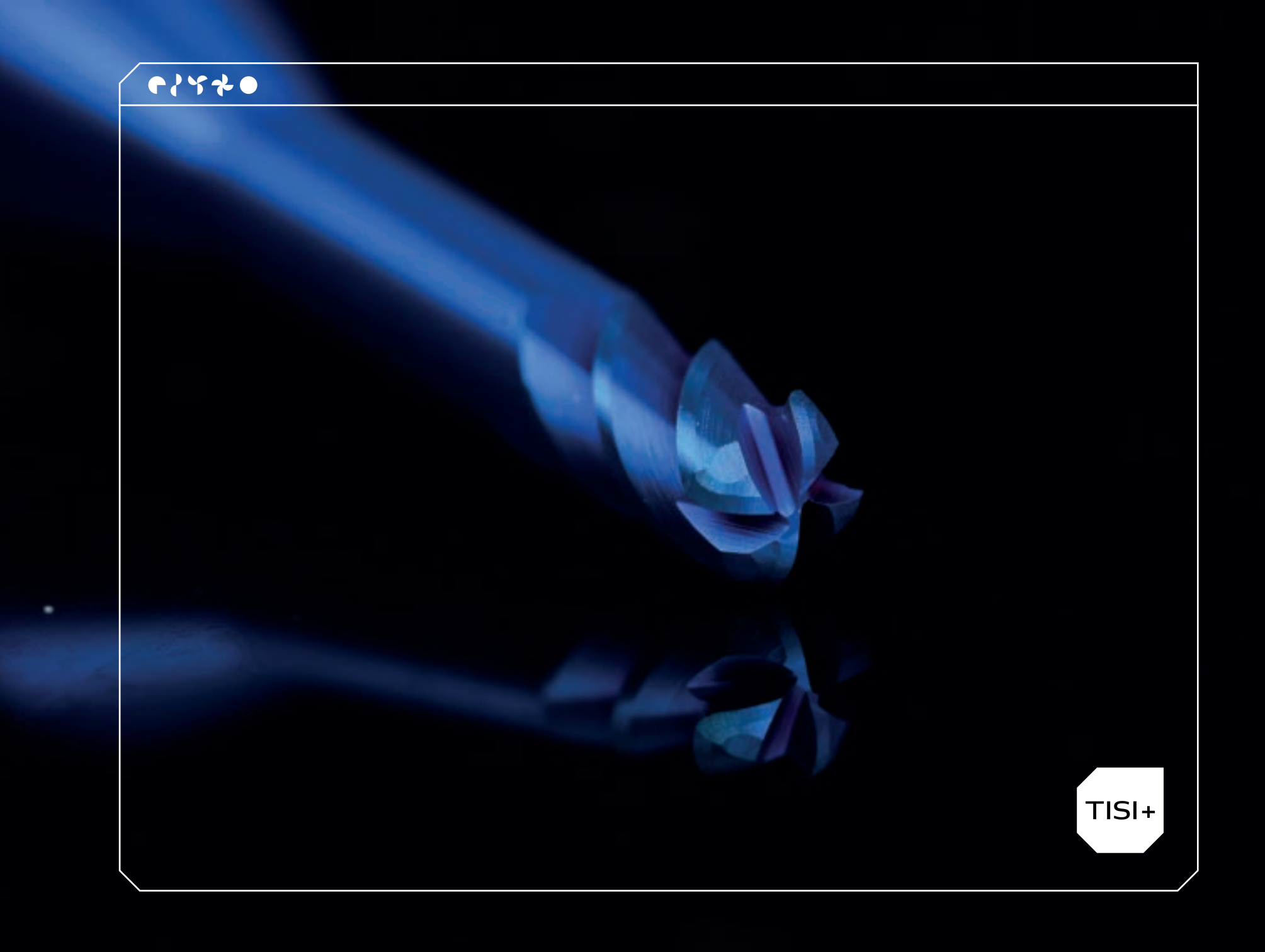
T445-3YM16	4	M1.6-M1.8	5
T445-32M20	4	M2	6




TISI+

By System:

IMES ICORE®

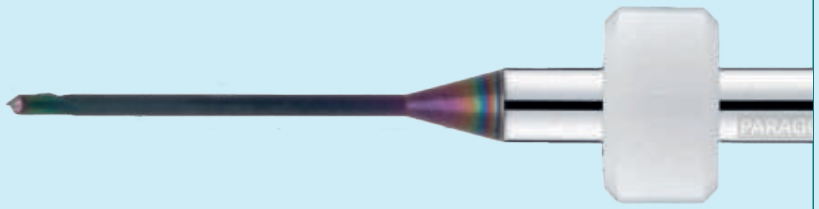
SHANK 3

SHANK 6

PMMA, PEEK

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.



Reference	d	D	l1
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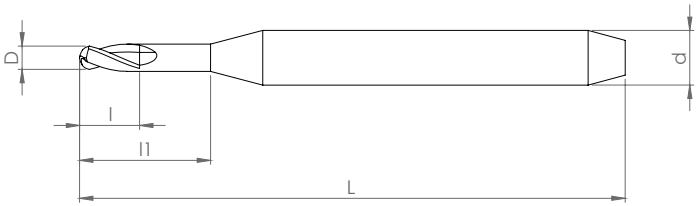
C348-1IB1016	3	1	16
C348-1IB2520	3	2,5	20

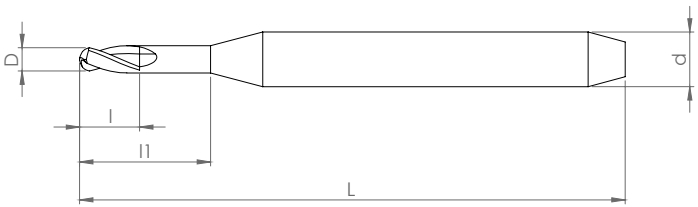


ZIRCONIA

A better performance thanks to their helix shape and diamond coating. The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 9 times more than uncoated tools.

Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.

Reference	d	D	l1
D347-2IB03TA	3	0,3	Tapered
D348-2IB0607	3	0,6	7
D348-2IB1016	3	1	16
D348-2IB2520	3	2,5	20

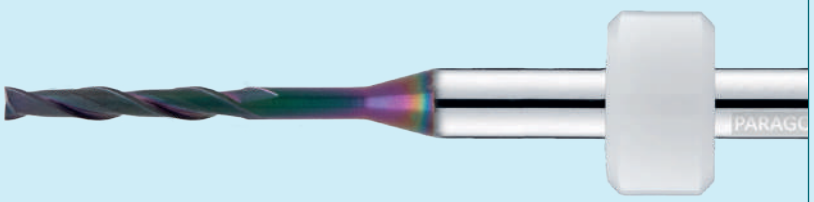


FLAT MULTIPURPOSE

DLC

Multi-purpose tools with reinforced flank and high helix angle. Designed for maximum productivity and excellent lifespan working with multiple materials.

Uses: CoCr, Titanium alloys, Zirconia, PEEK, Pre-sintered CoCr.



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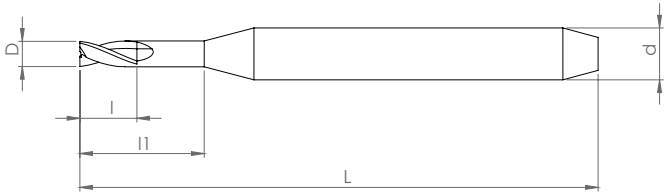
C350-2IB1515	3	1,5	15

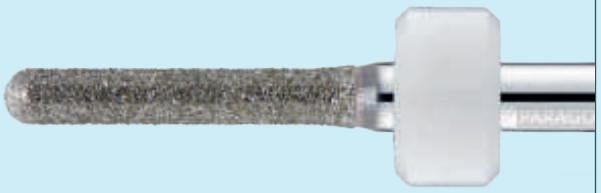


GLASS CERAMICS

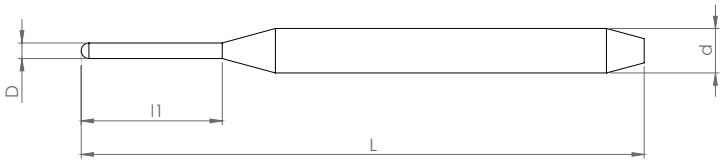
DLC

Designed to give maximum performance in the manufacture of vitreous ceramics fillings. DED coating with optimised grain size and maximum adhesión.

Uses: Glass Ceramics, Lithium disilicate, Lithium Disilicate.



Reference	d	D	l1
G340-0IB2515	3	2,5	15
G340-0IB1010	3	1,0	10
G340-0IB06TA	3	0,6	Tapered

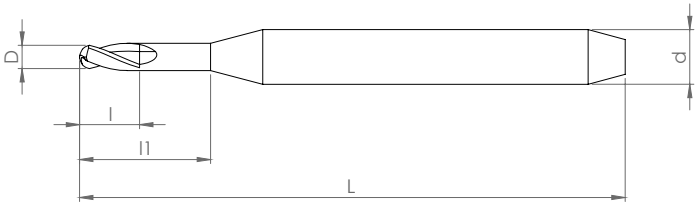


PMMA, PEEK

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.

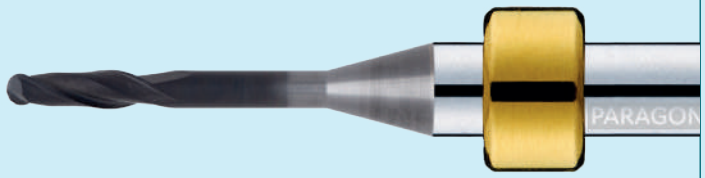
Reference	d	D	l1
C653-1IB0607	6	0,6	7
C653-1IB1016	6	1	16
C653-1IB2520	6	2,5	20



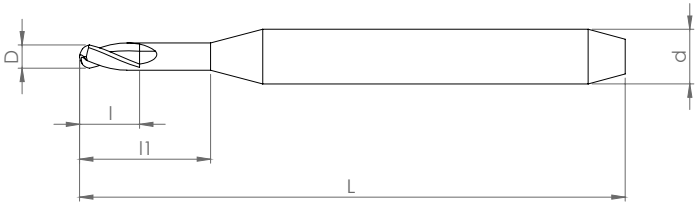
ZIRCONIA

A better performance thanks to their helix shape and diamond coating. The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 9 times more than uncoated tools.

Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.



Reference	Coatings	d	D	l1
C653-2IB03TA	DLC	6	0,3	Tapered
D653-2IB0607	Nano Diamond	6	0,6	7
D653-2IB0612	Nano Diamond	6	0,6	12
D653-2IB1016	Nano Diamond	6	1	16
D653-2IB2020	Nano Diamond	6	2	20
D653-2IB2520	Nano Diamond	6	2,5	20

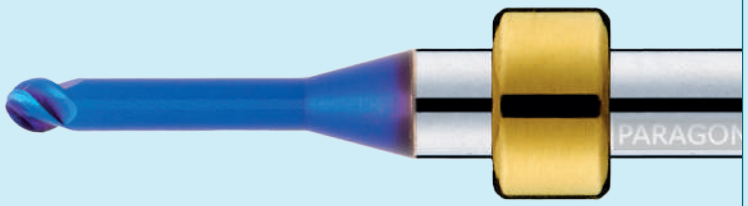


TITANIUM, CoCr

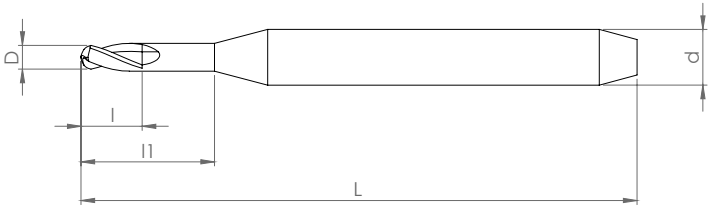
TISI +

Designed for maximum productivity with CoCr and titanium.
The combination of high helix angle with TiSi+ coating enables exceptional durability and cutting speeds even in dry milling.
Optimised for machining complex titanium, nickel and CoCr alloys.

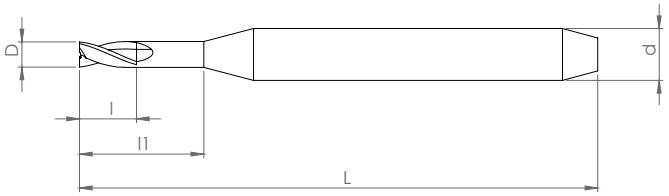
Uses: CoCr, Titanium alloys, Nickel alloys, Pre-sintered CoCr

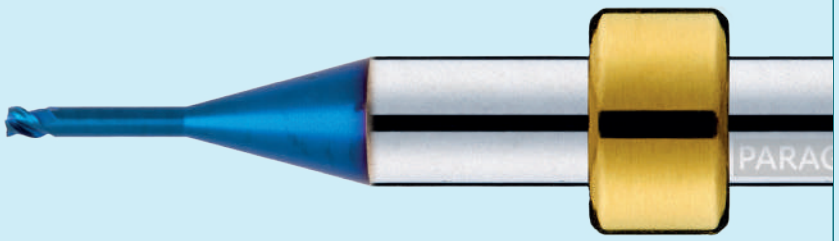


Reference	d	D	l1	Z
T650-2IB0504	6	0,5	4	2
T650-3IB1010	6	1	10	3
T650-3IB1012	6	1	12	3
T650-3IB1512	6	1,5	12	3
T650-3IB1516	6	1,5	16	3
T650-2IB2012	6	2	12	3
T650-3IB2016	6	2	16	3
T650-3IB3016	6	3	16	4
T650-3IB3020	6	3	20	3

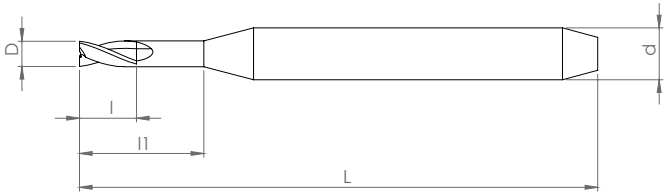


Reference	d	D	l1	Z
T650-2IF0504	6	0,5	4	2
T650-4IF1512	6	1,5	12	4
T650-4IF1516	6	1,5	16	4
T650-4IF2010	6	2	10	4

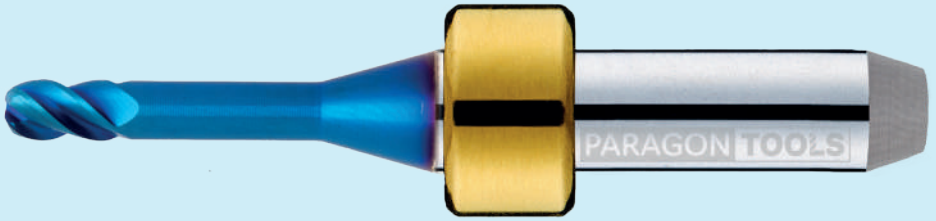




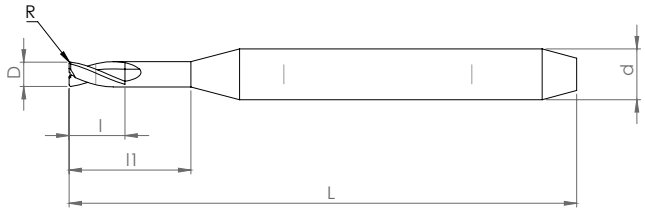
Reference	d	D	l1	Z
T650-3IF1508	6	1,5	8	3
T650-3IF1516	6	1,5	16	2



TISI +



Reference	d	D	R	l1	Z
T650-2IT201516	6	1,5	0,2	16	2
T650-2IT081508	6	1,5	0,08	8	2
T650-2IT081516	6	1,5	0,08	16	2
T650-4IT201008	6	1	0,2	8	4
T650-4IT201512	6	1,5	0,2	12	4
T650-4IT201516	6	1,5	0,2	16	4
T650-4IT202016	6	1,5	0,2	16	4
T650-4IT993015	6	3	1	15	4

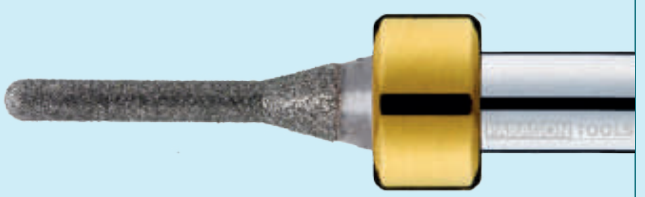


GLASS CERAMICS

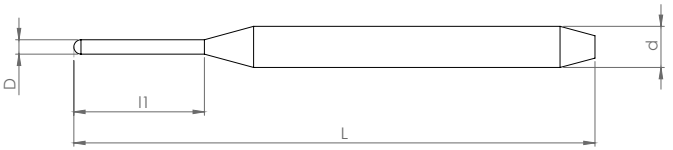
DED

Designed to give maximum performance in the manufacture of vitreous ceramics fillings. DED coating with optimised grain size and maximum adhesión.

Uses: Glass Ceramics, Lithium disilicate, Lithium Disilicate.



Reference	d	D	l1	l	L
G640-0IB2515	6	2,5	15	-	40
G640-0IB1010	6	1,0	10	-	40
G640-0IB0606	6	0,6	6	-	40

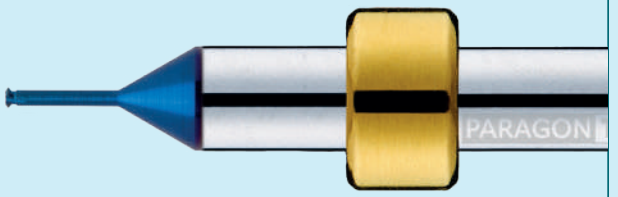


THREADING

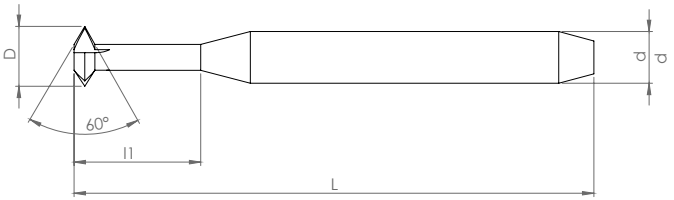
TISI +

With their reinforced cutting teeth and TiSi+ coating, the Paragon threading tools are designed to achieve faster milling, with greater precision and a longer lifespan even on complex materials. Milling of metric screw threads in titanium alloys

Uses: Metric threading on Titanium alloys and other materials



Reference	d	Metric Thread	l1	l	L
T645-3IM14	4	M1.4	4,5	-	45
T645-3YM16	4	M1.6-M1.8	5	-	45
T645-3YM20	4	M2	6	-	45



By System:

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All company, product and service names used are for identification purposes only.

ARUM®

SHANK 4

SHANK 6

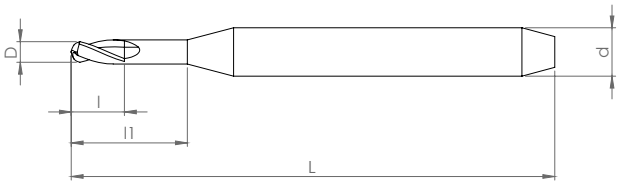
PMMA, PEEK

DLC

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.

Reference	d	D	l1
C444-2UB1010	3	1	10
C447-2UB1514	3	1,5	14
C450-2UB2018	3	2	18

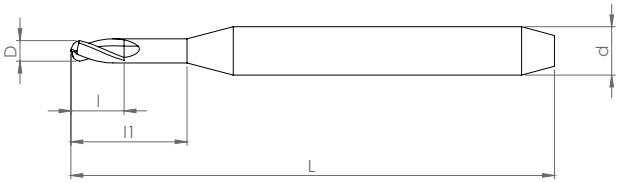


ZIRCONIA

A better performance thanks to their helix shape and diamond coating. The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 9 times more than uncoated tools.

Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.

Reference	d	D	l1
D445-2UB0610	3	0,6	10
D450-2UB1016	3	1	16
D450-2UB2020	3	2	20



ZIRCONIA

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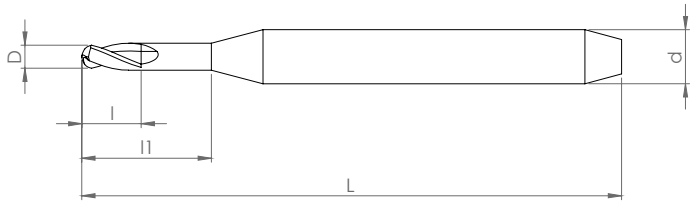
Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.

Reference	d	D	l1
D663-2UB0613	3	0,6	13
D663-2UB1016	3	1	16
D663-2UB2020	3	2	20



By System:

VHF®

4 AXIS

5 AXIS

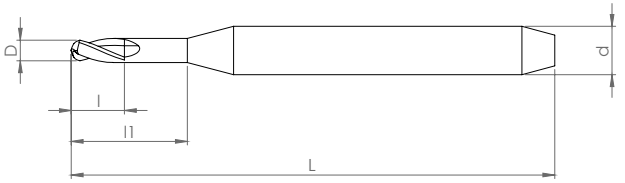
PMMA, PEEK

DLC

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.

Reference	d	D	l1	L
C335-2VB1016	3	1	16	35
C335-2VB2017	3	2	17	35



ZIRCONIA

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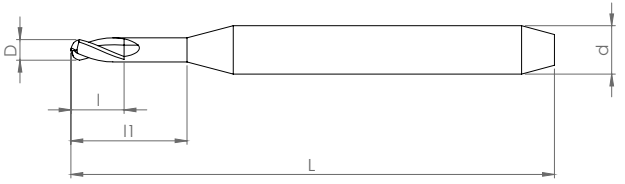
Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.

Reference	d	D	l1	L	Z
D335-2VB1017	3	1	17	35	2
D335-3VB2017	3	2	17	35	3



PMMA, PEEK

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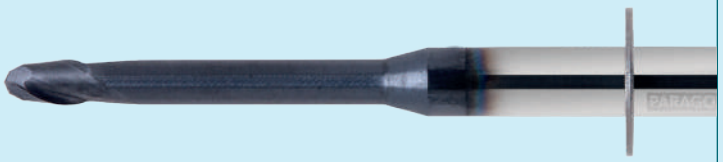
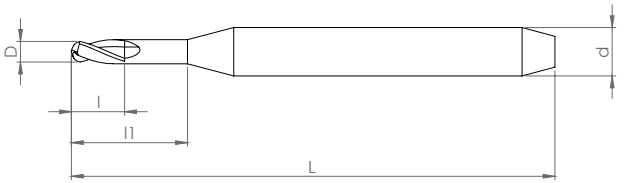
Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.



Reference	Geometry	d	D	l1	L	Z
C340-2VB0603	Ball end	3	0,6	3	40	2
C340-2VB1016	Ball end	3	1	16	40	2
C340-2VB2017	Ball end	3	2	17	40	2
C340-1VF2516	Flat	3	2,5	16	40	1



ZIRCONIA

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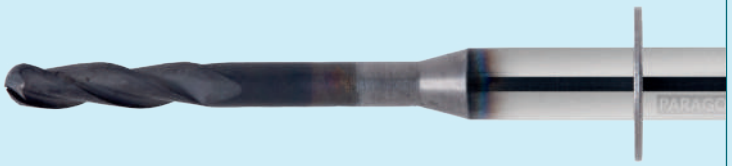
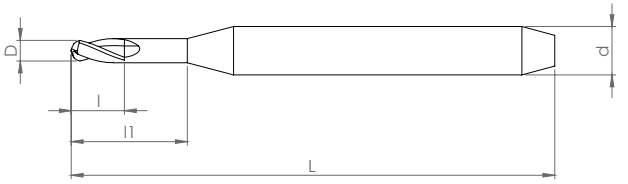
Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.



Reference	d	D	l1	L	Z
D340-2VB0603	3	0,6	3	40	2
D340-2VB1017	3	1	17	40	2
D340-3VB2017	3	2	17	40	3

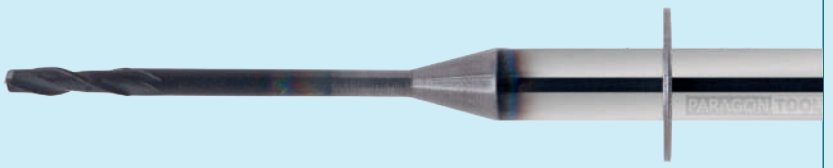


FLAT MULTIPURPOSE

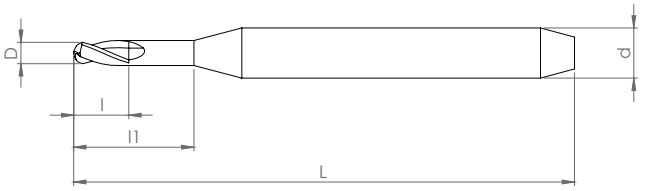
TISI +

Multi-purpose tools with reinforced flank and high helix angle. Designed for maximum productivity and excellent lifespan working with multiple materials.

Uses: CoCr, Titanium alloys, Zirconia, PEEK, Pre-sintered CoCr.



Reference	Coatings	d	D	l1	L	Z
D340-2VF1216	Nano Diamond	3	0,5	4	40	2
T340-3VF0503	TiSi+	3	1,5	15	40	3



TITANIUM

TISI +

Designed for maximum productivity with CoCr and titanium.
The combination of high helix angle with TiSi+ coating enables exceptional durability and cutting speeds even in dry milling. Optimised for machining complex titanium, nickel and CoCr alloys.

Uses: CoCr, Titanium alloys, Nickel alloys, Pre-sintered CoCr

Reference	d	D	l1	L	Z
T335-4IB2012	3	2	12	4	4
T335-2IB1008	3	1	8	2	2
T335-2IB0601	3	0,6	1,2	2	2

Reference	d	D	R	l	L	Z
T335-2IT101208	3	1,2	0,1	8	35	2

By System:

AMANN®

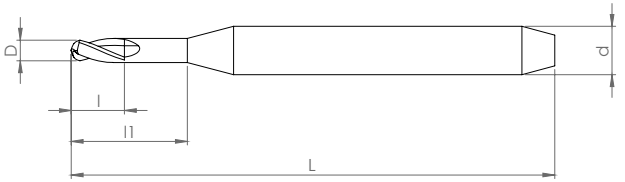
PMMA, PEEK

DLC

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.

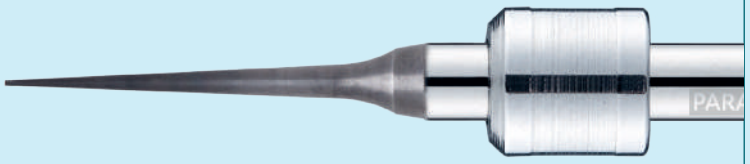
Reference	d	D	l1
C347-2AB0612	3	0,6	12
C347-2AB1017	3	1	17
C347-2AB2517	3	2,5	17



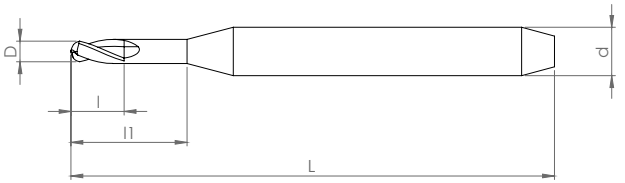
ZIRCONIA

A better performance thanks to their helix shape and diamond coating. The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 9 times more than uncoated tools.

Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.



Reference	Coatings	d	D	l1	
D347-2AB03TA	Nano Diamond	3	0,3	Tapered	
D347-2AB0612	Nano Diamond	3	0,6	12	
D347-2AB1017	Nano Diamond	3	1	17	
D347-2AB2517	Nano Diamond	3	2,5	17	
C347-2AF0610	DLC	3	0,6	10	
C347-3AF1212	DLC	3	1,2	12	

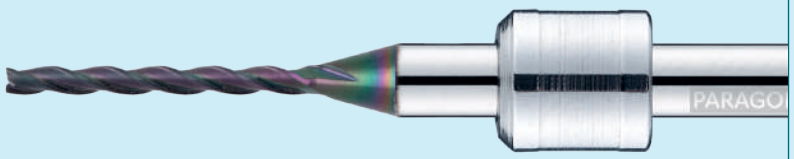


FLAT MULTIPURPOSE

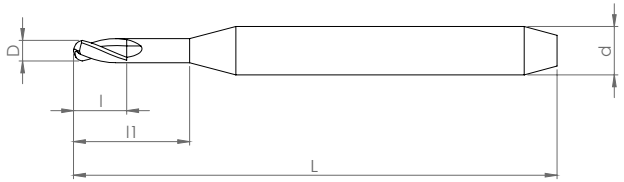
DLC

Multi-purpose tools with reinforced flank and high helix angle. Designed for maximum productivity and excellent lifespan working with multiple materials.

Uses: CoCr, Titanium alloys, Zirconia, PEEK, Pre-sintered CoCr.



Reference	d	D	l1	Z
C347-2AF0610	3	0,6	10	2
C347-3AF1212	3	1,2	12	3



By System:

SIRONA®

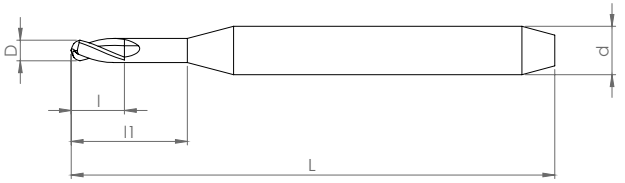
PMMA, PEEK

DLC

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.

Reference	d	D	l1
C342-2SB0505	3	0,5	5
C342-2SB1017	3	1	17
C342-2SB2524	3	2,5	24

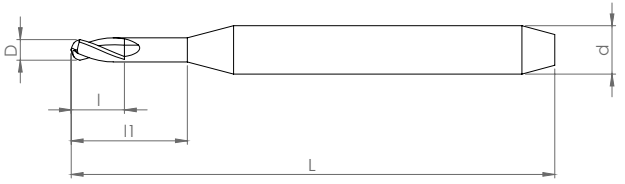


ZIRCONIA

A better performance thanks to their helix shape and diamond coating. The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 9 times more than uncoated tools.

Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.

Reference	d	D	l1	Z
D342-2SB0505	3	0,5	5	2
D342-2SB1017	3	1	17	2
D342-4SB2524	3	2,5	24	4

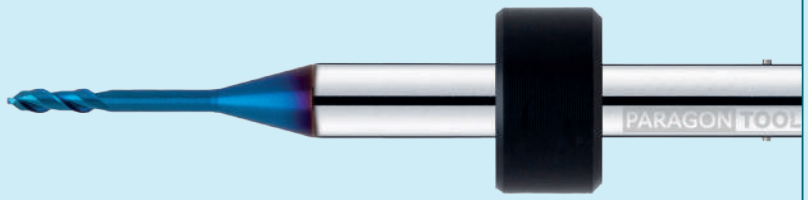


TITANIUM, CoCr

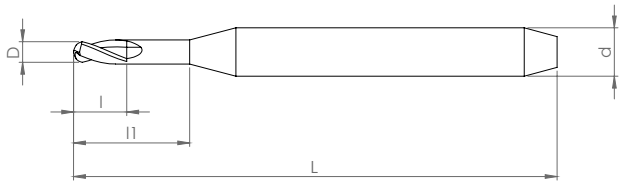
TISI+

Designed for maximum productivity with CoCr and titanium. The combination of high helix angle with TiSi+ coating enables exceptional durability and cutting speeds even in dry milling. Optimised for machining complex titanium, nickel and CoCr alloys.

Uses: CoCr, Titanium alloys, Nickel alloys, Pre-sintered CoCr



Reference	d	D	l1
T339-3SB2012	3	2	12
T338-3SB1008	3	1	8




TISI+

By System:

*All trademarks, logos and brand names are the property of their respective owners.
All company, product and service names used are for identification purposes only.

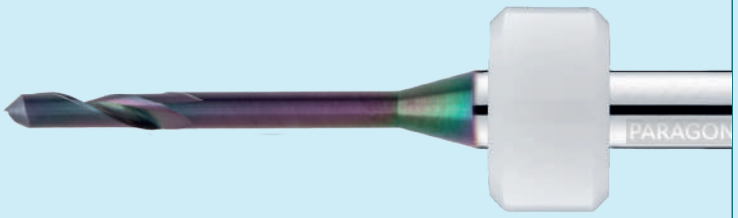
UP3D-AIDITE®

PMMA, PEEK

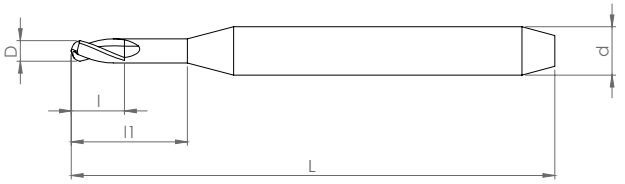
DLC

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.



Reference	d	D	l1	Z
C450-1PB1016	4	1	16	2
C450-1PB2020	4	2	20	1
C450-2PB0610	4	0,6	10	1



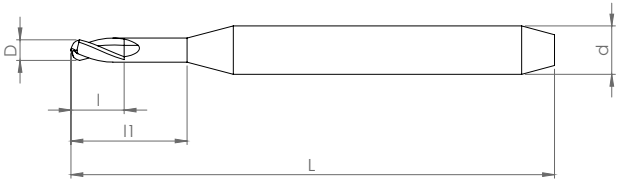
ZIRCONIA

TISI+

A better performance thanks to their helix shape and diamond coating. The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 9 times more than uncoated tools.

Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.

Reference	Coating	d	D	l1
T440-2PB0304	TISI+	4	0,3	4
D445-2PB0610	Nano Diamond	4	0,6	10
D450-2PB1016	Nano Diamond	4	1	16
D450-2PB2020	Nano Diamond	4	2	20



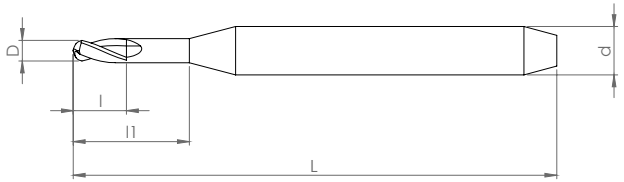
FLAT MULTIPURPOSE

TISI+

Multi-purpose tools with reinforced flank and high helix angle. Designed for maximum productivity and excellent lifespan working with multiple materials.

Uses: CoCr, Titanium alloys, Zirconia, PEEK, Pre-sintered CoCr.

Reference	Coating	d	D	l1
T450-2PF1020	TISI+	4	1	20
T450-2PF1520	TISI+	4	1,5	20
D450-4PF1520	Nano Diamond	4	1,5	20




DED

By System:

*All trademarks, logos and brand names are the property of their respective owners.
All company, product and service names used are for identification purposes only.

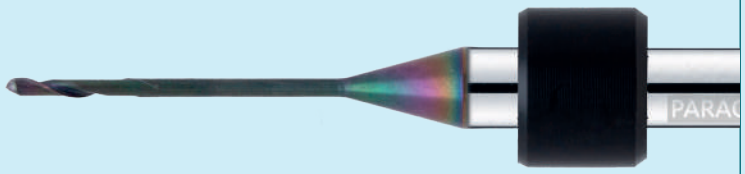
XTCERA®

PMMA, PEEK

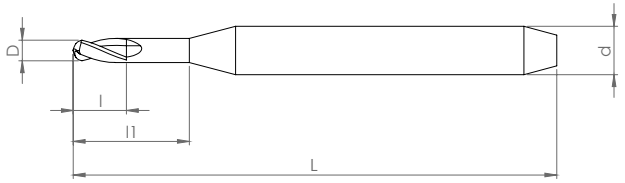
DLC

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.



Reference	d	D	l1	Z
C450-1XB1016	4	1	16	2
C450-1XB2020	4	2	20	1
C450-2XB0610	4	0,6	10	1



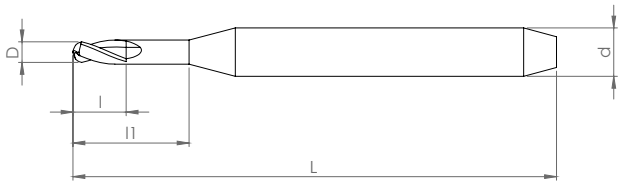
ZIRCONIA

TISI+

A better performance thanks to their helix shape and diamond coating. The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 9 times more than uncoated tools.

Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.

Reference	Coating	d	D	l1
T440-2XB0304	TISI+	4	0,3	4
D445-2XB0610	Nano Diamond	4	0,6	10
D450-2XB1016	Nano Diamond	4	1	16
D450-2XB2020	Nano Diamond	4	2	20



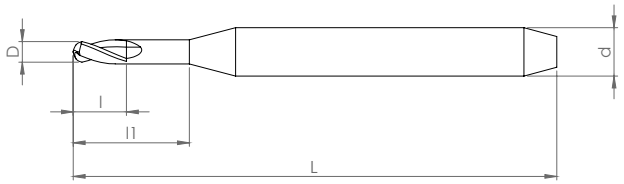
FLAT MULTIPURPOSE

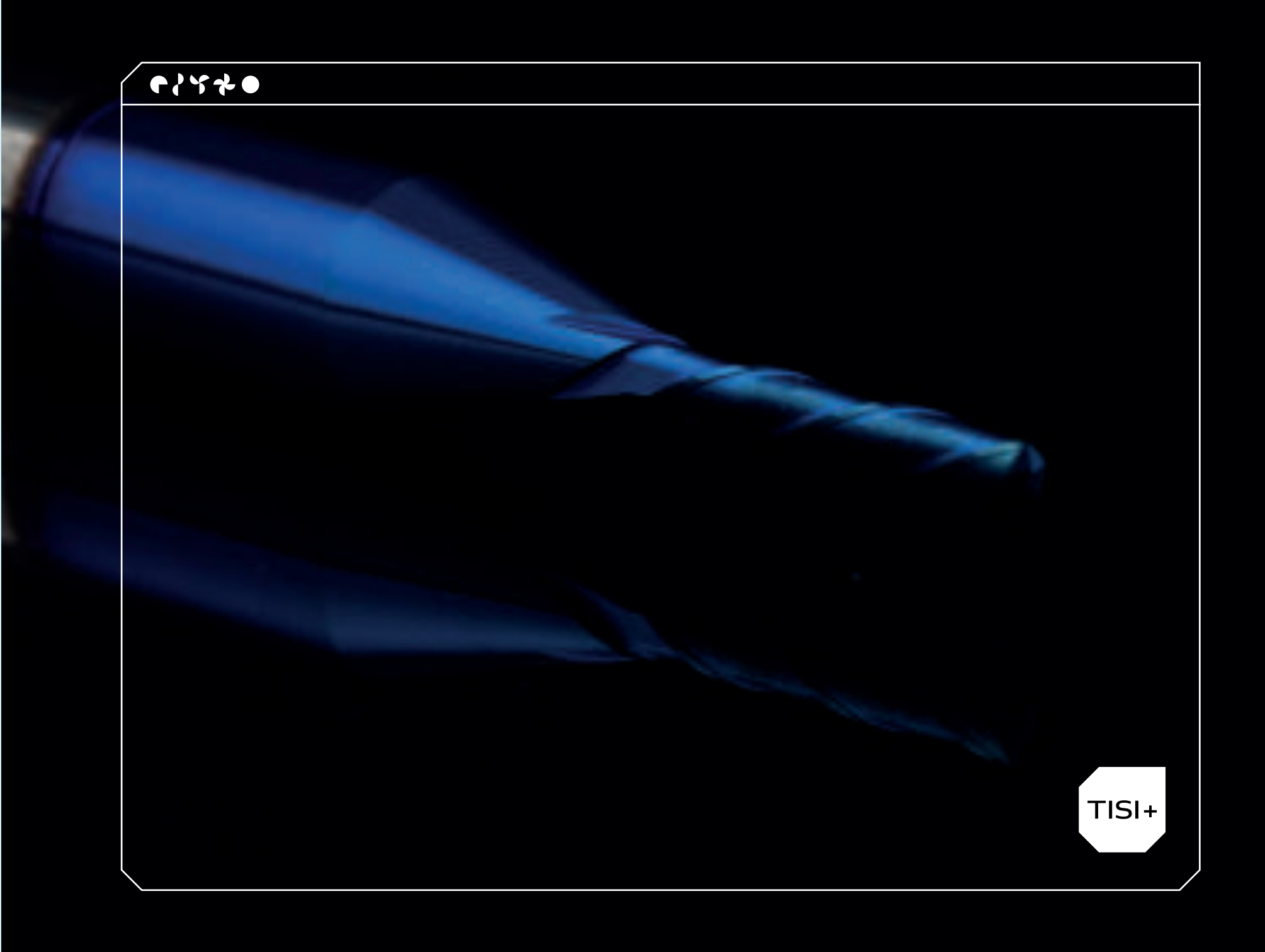
TISI+

Multi-purpose tools with reinforced flank and high helix angle. Designed for maximum productivity and excellent lifespan working with multiple materials.

Uses: CoCr, Titanium alloys, Zirconia, PEEK, Pre-sintered CoCr.

Reference	d	D	l1
T450-2XF1020	4	1	20
T450-2XF1520	4	1,5	20




TISI+

By System:

ZIRKONZAHN®

SHANK 3

SHANK 6

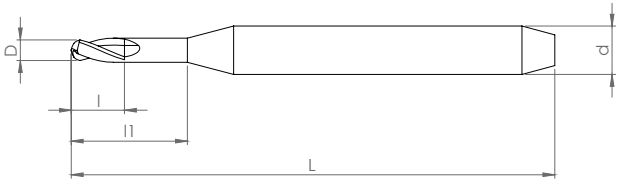
PMMA, PEEK

DLC

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.

Reference	Geometries	d	D	l1
C357-1ZB1016	Ball end	3	1	16
C357-1ZB2018	Ball end	3	2	18
C357-2ZB03TA	Ball end	3	0,3	Tapered
C357-2ZB0505	Ball end	3	0,5	5
C357-2ZB1016	Ball end	3	1	16
C357-2ZB2018	Ball end	3	2	18
C657-2ZF1517	Flat	3	1.5	17



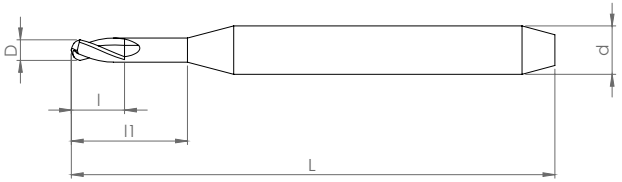
ZIRCONIA

DLC

A better performance thanks to their helix shape and diamond coating. The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 9 times more than uncoated tools.

Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.

Reference	Coating	Geometries	d	D	l1
C357-2ZB03TA	DLC	Ball end	3	0,3	Tapered
D357-2ZB0505	Nano Diamond	Ball end	3	0,5	5
D357-2ZB1016	Nano Diamond	Ball end	3	1	16
D357-2ZB2018	Nano Diamond	Ball end	3	2	18
C657-2ZF1517	DLC	Flat	3	1.5	17

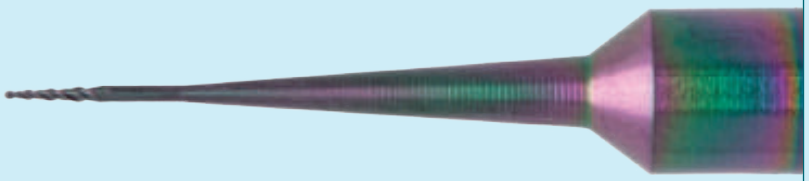


PMMA, PEEK

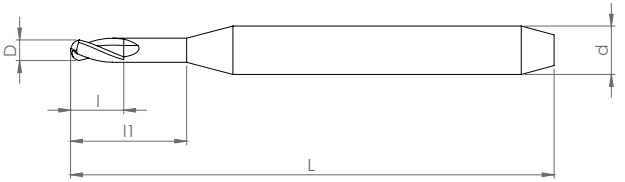
DLC

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.



Reference	Geometries	d	D	l1	Z
C650-1ZB2018	Ball end	6	2	18	1
C650-2ZB03TA	Ball end	3	0,3	Tapered	1
C650-2ZB0505	Ball end	3	0,5	5	2
C650-2ZB1016	Ball end	3	1	16	2
C650-2ZB2018	Ball end	3	2	18	2
C650-2ZF1517	Flat	3	1.5	17	2



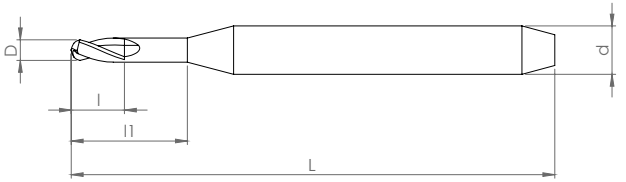
ZIRCONIA

DLC

A better performance thanks to their helix shape and diamond coating. The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 9 times more than uncoated tools.

Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.

Reference	Coating	d	D	l1
C650-2ZB03TA	DLC	3	0,3	Tapered
D650-2ZB0505	Nano Diamond	6	0,5	5
D650-2ZB1012	Nano Diamond	6	1	12
D650-2ZB2018	Nano Diamond	6	2	18
C650-2ZF1517	DLC	3	1.5	17

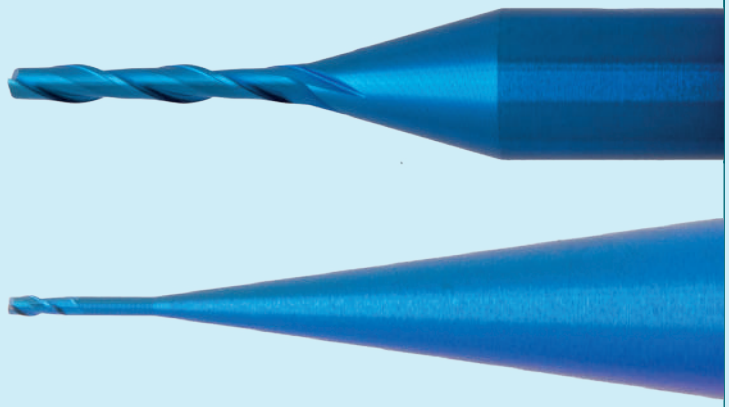


TITANIUM, CoCr

TISI +

Designed for maximum productivity with CoCr and titanium.
The combination of high helix angle with TiSi+ coating enables exceptional durability and cutting speeds even in dry milling.
Optimised for machining complex titanium, nickel and CoCr alloys.

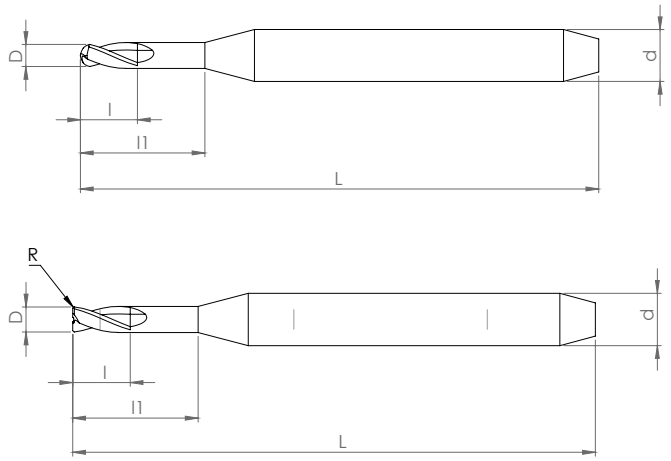
Uses: CoCr, Titanium alloys, Nickel alloys, Pre-sintered CoCr



Reference	d	D	l1	Z	Geometry
T650-2ZB0503	6	1	12	2	
T650-2ZB1012	6	1	12	2	
T650-2ZB2012	6	2	12	2	
T650-2ZB3018	6	3	18	2	

Reference	d	D	l1	Z	Geometry
T650-2ZF0503	6	1,2	10	2	
T650-2ZF1210	6	1,2	10	2	
T650-2ZF1510	6	1,5	10	2	
T650-2ZF1515	6	1,5	15	2	

Reference	d	D	R	l1	Z	Geometry
T650-4ZT251512	6	1,5	0,25	12	4	
T650-4ZT502012	6	2	0,5	12	4	B
T650-4ZT753018	6	3	0,75	18	4	



By System:

DENTAL® MACHINE

SHANK 3

SHANK 4

PMMA, PEEK

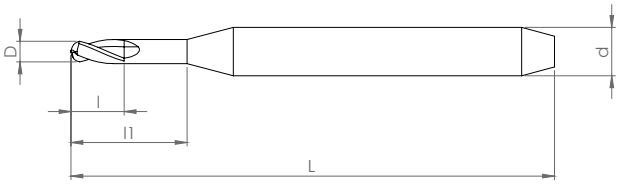
DLC

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.

PRODUCT COMING SOON

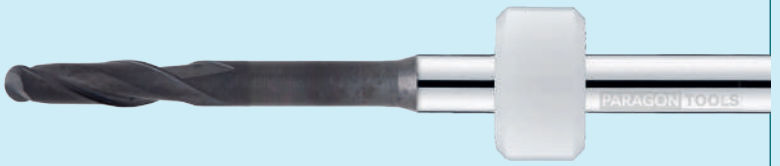
Reference	d	D	l1
C348-1DB0607		0,6	0,6
C348-1DB1016		1	1
C348-1DB2020		2	2



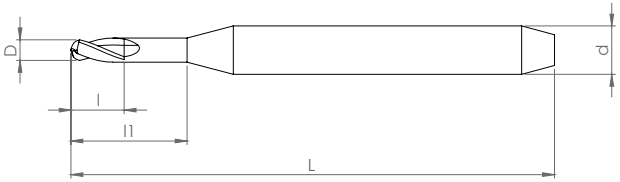
ZIRCONIA

A better performance thanks to their helix shape and diamond coating. The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 9 times more than uncoated tools.

Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.



Reference	d	D	l1
D348-2DB0607	3	0,6	0,6
D348-2DB1016	3	1	1
D348-2DB2520	3	2,5	2,5

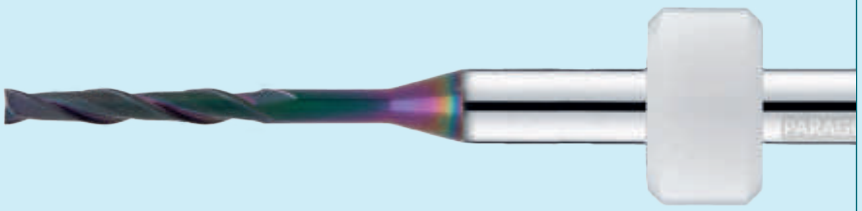


FLAT MULTIPURPOSE

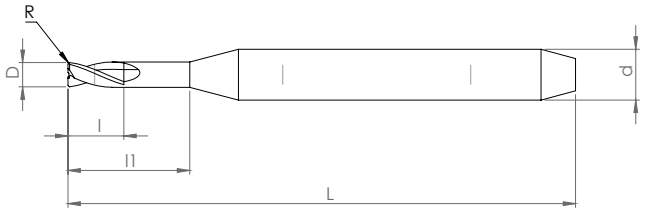
DLC | DED

Multi-purpose tools with reinforced flank and high helix angle. Designed for maximum productivity and excellent lifespan working with multiple materials.

Uses: CoCr, Titanium alloys, Zirconia, PEEK, Pre-sintered CoCr.



Reference	Coating	d	D	l1	Z	Geometry
C350-2DF1515	DLC	3	1,5	17	2	
G340-0DB05TA	DED	3	0,5	Tapered	0	
G340-0DB1010	DED	3	1	10	0	
G340-0DB2515	DED	3	2,5	15	0	



PMMA, PEEK

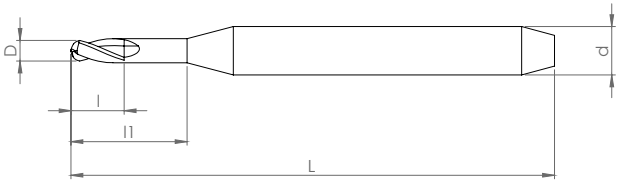
DLC

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.

PRODUCT COMING SOON

Reference	d	D	l1	Z
C450-1DB0606	4	0,6	6	1
C450-1DB1016	4	1	16	1
C450-1DB2020	4	2	20	1
C450-2DB0605	4	0,6	5	2
C450-2DB1016	4	1	16	2
C450-2DB2020	4	2	20	2

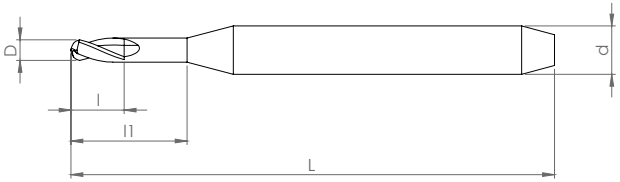


ZIRCONIA

A better performance thanks to their helix shape and diamond coating. The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 9 times more than uncoated tools.

Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.

Reference	d	D	l1
D450-2DB1016	4	1	16
D450-2DB2020	4	2	20
D450-2DB0606	4	0,6	6

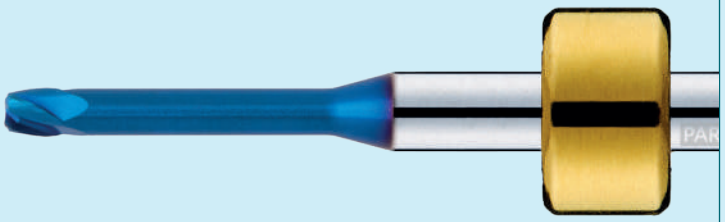


TITANIUM, CoCr

TISI +

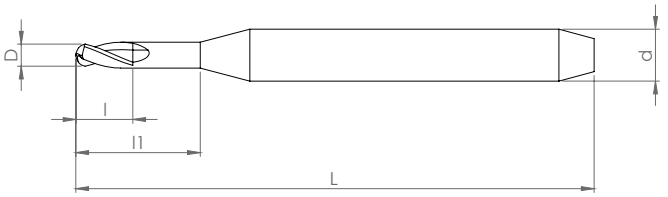
Designed for maximum productivity with CoCr and titanium.
The combination of high helix angle with TiSi+ coating enables exceptional durability and cutting speeds even in dry milling.
Optimised for machining complex titanium, nickel and CoCr alloys.

Uses: CoCr, Titanium alloys, Nickel alloys, Pre-sintered CoCr

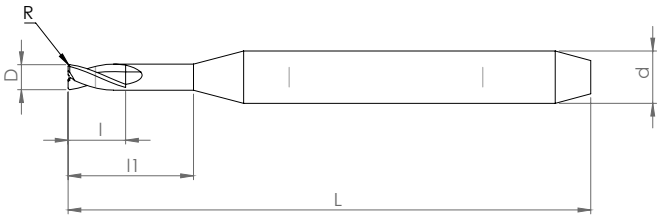


Reference	d	D	l1	Z	Geometry
T450-2DB1008	4	0,5	3	2	
T450-2DB2012	4	1,5	16/20	2	
T450-3DB1008	4	2	6	2	
T450-3DB2012	4	0,5	3	3	

Reference	d	D	l1	Z	Geometry
T440-2DF0503	4	0,5	3	3	
T450-2DF1520	4	1,5	16/20	3	
T445-2DF2006	4	2	6	3	
T440-3DF0503	4	0,5	3	3	
T450-3DF1520	4	1,5	16/20	3	
T445-3DF2006	4	2	6	3	



Reference	d	D	l1	R	Z	Geometry
T450-4DT201512	4	1,5	12	0,2	4	B
T450-4DT502516	4	2,5	16	0,5	4	

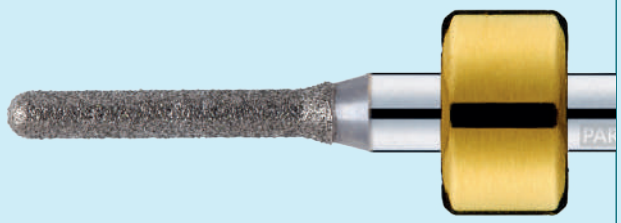


GLASS CERAMICS

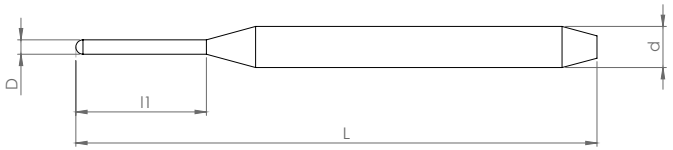
DED

Designed to give maximum performance in the manufacture of vitreous ceramics fillings. DED coating with optimised grain size and maximum adhesión.

Uses: Glass Ceramics, Lithium disilicate, Lithium Disilicate.



Reference	d	D	l1
G445-0DB05TA	4	0,5	Tapered
G445-0DB1010	4	1	10
G445-0DB2515	4	2,5	15

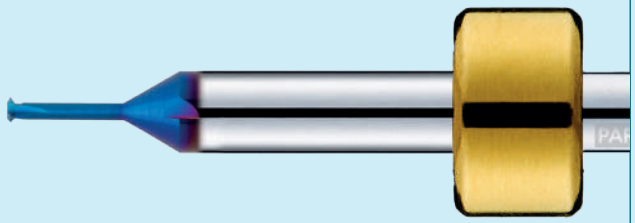


THREADING

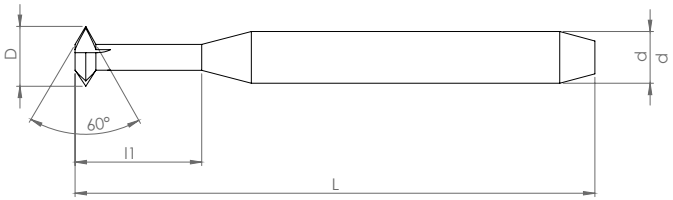
TISI +

With their reinforced cutting teeth and TiSi+ coating, the Paragon threading tools are designed to achieve faster milling, with greater precision and a longer lifespan even on complex materials. Milling of metric screw threads in titanium alloys

Uses: Metric threading on Titanium alloys and other materials.



Reference	d	Metric Thread	D	l1	h
T445-3DM14	4	M1.4	1,05	4,5	0,24
T445-3DM16	4	M1.6-M1.8	1,2	5	0,28
T445-3DM20	4	M2	1,5	6	0,31



By System:

ROLAND®

5 AXIS DRY MILLING - DWX-50D, 51D, 52D, 52DC, 52DCI

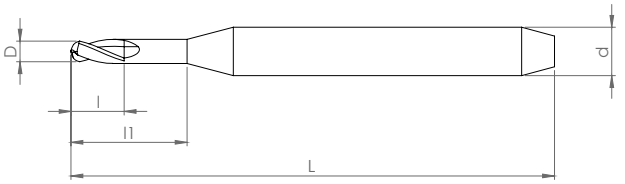
4 AXIS WET MILLING - DWX-4W, 42W

PMMA, PEEK

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.

Reference	Geometry	d	D	l1	Z
C450-1NB0606	Ball end	4	0,6	6	1
C450-1NB0614	Ball end	4	0,6	14	1
C450-1NB1016	Ball end	4	1	16	1
C450-1NB2020	Ball end	4	2	20	1
C450-2NB0610	Ball end	4	0,6	10	2
C450-2NB1016	Ball end	4	1	16	2
C450-2NB2020	Ball end	4	2	20	2
C450-2NF3020	Flat	4	3	20	2

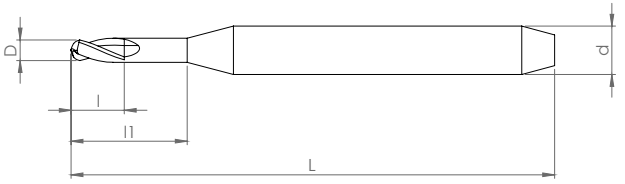


ZIRCONIA

A better performance thanks to their helix shape and diamond coating. The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 9 times more than uncoated tools.

Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.

Reference	Coatings	d	D	l1	Z
D450-2NB0304	Ball end	4	0,3	4	2
D445-2NB0610	Nano Diamond	4	0,6	10	2
D450-2NB1016	Nano Diamond	4	1	16	2
D450-2NB2020	Nano Diamond	4	2	20	2
D450-3NB1012	Nano Diamond	4	1	16	3
D450-3NB2020	Nano Diamond	4	2	20	3

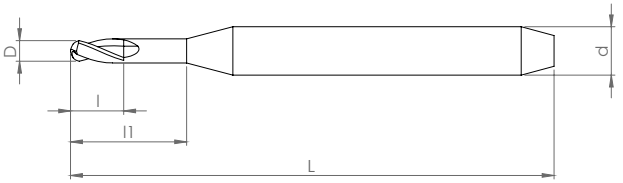


FLAT MULTIPURPOSE

Multi-purpose tools with reinforced flank and high helix angle. Designed for maximum productivity and excellent lifespan working with multiple materials.

Uses: CoCr, Titanium alloys, Zirconia, PEEK, Pre-sintered CoCr.

Reference	d	D	l1	Z
T445-3NF0503	4	0,5	3	3
T445-2NF0610	4	0,6	10	2
T450-2NF1020	4	1	20	2
T450-3NF1520	4	1,5	20	3
T450-2NF2020	4	2	20	3

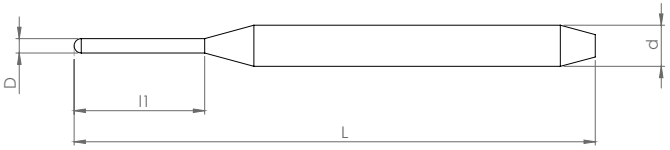


HYBRID CERAMICS

Excellent results in dry milling of nanocomposites and hybrid ceramics. With their Nano Diamond coating, exceptionally long-lasting results are achieved on highly abrasive materials.

Uses: Hybrid ceramics, Nanocomposites.

Reference	d	D	l1
D445-2NB0608	4	0,6	8
D460-2NB1010	4	1	10
D450-2NB2016	4	2	12

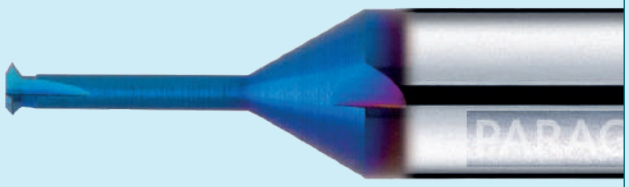


THREADING

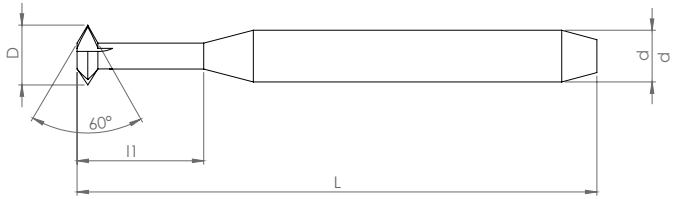
TISI +

With their reinforced cutting teeth and TiSi+ coating, the Paragon threading tools are designed to achieve faster milling, with greater precision and a longer lifespan even on complex materials. Milling of metric screw threads in titanium alloys

Uses: Metric threading on Titanium alloys and other materials.



Reference	d	Metric Thread	D	l1	h
T445-3NM14	4	M1.4	1,05	4,5	0,24
T445-3NM16	4	M1.6-M1.8	1,2	5	0,28
T445-3NM20	4	M2	1,5	6	0,31

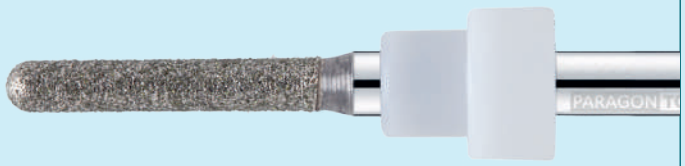


GLASS CERAMICS

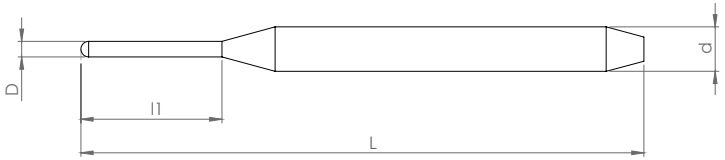
DED

Designed to give maximum performance in the manufacture of vitreous ceramics fillings. DED coating with optimised grain size and maximum adhesión.

Uses: Glass Ceramics, Lithium disilicate, Lithium Disilicate.



Reference	d	D	l1
G340-0NB05TA	3	0,5	4
G340-0NB1010	3	1	10
G340-0NB1511	3	1,5	11
G340-0NB2515	3	2,5	15

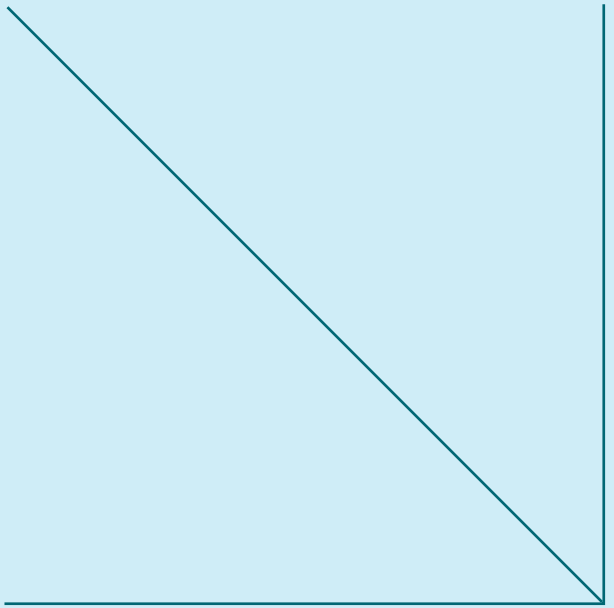


02.1

Open systems

SHANK 4

SHANK 6



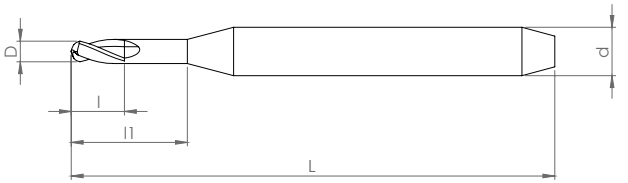
PMMA, PEEK

DLC

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.

Reference	d	D	l1	Z
C450-1NB0606	4	0,6	6	1
C450-1NB0614	4	0,6	14	1
C450-1NB1016	4	1	16	1
C450-1NB2020	4	2	20	1
C450-2NB0610	4	0,6	10	2
C450-2NB1016	4	1	16	2
C450-2NB2020	4	2	20	2



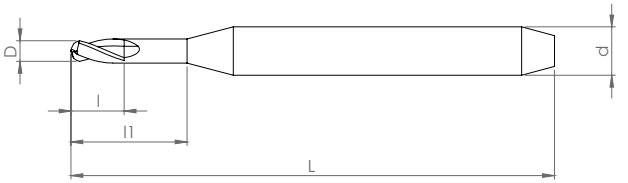
ZIRCONIA

TISI +

A better performance thanks to their helix shape and diamond coating. The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 9 times more than uncoated tools.

Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.

Reference	d	D	l1	Z	Geometry
D450-2NB0304	4	0,3	4	2	TiSi+
D445-2NB0610	4	0,6	10	2	Nano Diamond
D450-2NB1016	4	1	16	2	Nano Diamond
D450-2NB2020	4	2	20	2	Nano Diamond
D450-3NB1016	4	1	16	3	Nano Diamond
D450-3NB2020	4	2	20	3	Nano Diamond



TITANIUM, CoCr

TISI +

Reference	d	D	l1	Z
T450-3NB0604	4	0,6	4	3
T450-3NB1008	4	1	8	3
T450-3NB1512	4	1.5	12	3
T450-3NB2012	4	2	12	3
T450-3NB2016	4	2	16	3
T450-3NB3012	4	3	12	3

Reference	d	D	l1	Z
T440-3NF0503	4	0,5	3	3
T445-3NF1408	4	1,4	8	3
T445-3NF1416	4	1,4	8	3
T445-3NB1508	4	1,5	8	3
T450-3NF1810	4	1,8	10	3
T450-3NF1818	4	1,8	18	2

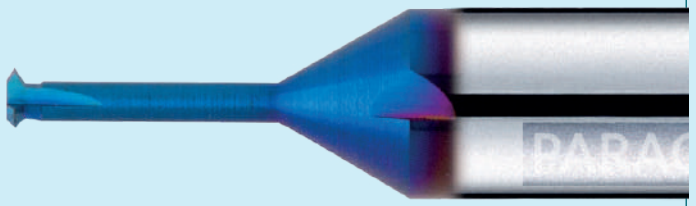
Reference	d	R	D	l1	Z
T445-2NT201008	4	0,2	1	0,5	4
T450-4ZT502512	4	0,5	2,5	0,2	4
T450-4NT201512	4	0,2	1,5	0,2	4
T450-4NT201516	4	0,2	1,5	0,2	4

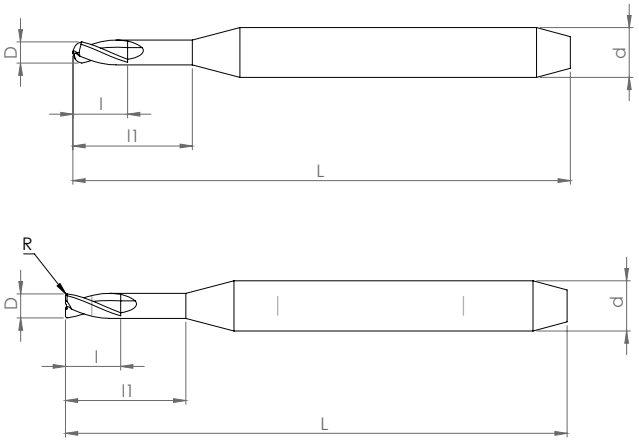
B

Reference	d	Metric Thread	D	l1	h	Z
T445-3NM14	4	M1.4	1,05	4,5	0,24	4
T445-3NM16	4	M1.6-M1.8	1,2	5	0,28	4
T445-3NM20	4	M2	1,5	6	0,31	4

Designed for maximum productivity with CoCr and titanium.
The combination of high helix angle with TiSi+ coating enables exceptional durability and cutting speeds even in dry milling. Optimised for machining complex titanium, nickel and CoCr alloys.

Uses: CoCr, Titanium alloys, Nickel alloys, Pre-sintered CoCr





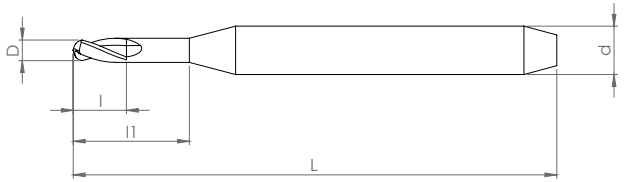
PMMA, PEEK

DLC

Maximum performance in polymer machining. Designed with positive shear angle and low-friction coating for optimum chip removal and reduced temperature in the cutting area, resulting in a higher milling speed, better surface finish and considerably longer lifespan.

Uses: PMMA, PEEK, Wax, Nanocomposite, PU, PA.

Reference	d	D	l1
C653-1NB0607	6	0,6	7
C653-1NB1016	6	1	16
C653-1NB2520	6	2,5	20



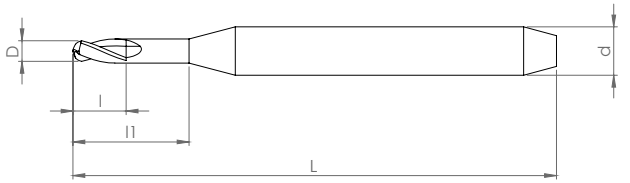
ZIRCONIA

TISI +

A better performance thanks to their helix shape and diamond coating. The three-fold combination of the tools' very hard surface, low coefficient of friction and micro grain WC results in an increased lifespan of up to 9 times more than uncoated tools.

Uses: Zirconia, Pre-sintered CoCr, Carbon fiber, Fiberglass.

Reference	d	D	l1	Z	Coating
C650-2NB03TA	6	0,3			DLC
D653-2NB0607	6	0,6	7	2	Nano Diamond
D653-2NB1016	6	1	16	2	Nano Diamond
D653-2NB2020	6	2	20	2	Nano Diamond
D653-2NB2520	6	2,5	20	2	Nano Diamond



TITANIUM, CoCr

TISI +

Reference	d	D	l1	Z	Geometry
T650-2NB0504	6	0,5	4	2	
T650-3NB1010	6	1	10	3	
T650-3NB1012	6	1	12	3	
T650-3NB1512	6	1,5	12	3	
T650-3NB1516	6	1,5	16	3	
T650-2NB2012	6	2	12	3	
T650-3NB2016	6	2	16	3	
T650-3NB3016	6	3	16	3	
T650-2NB3020	6	3	20	2	

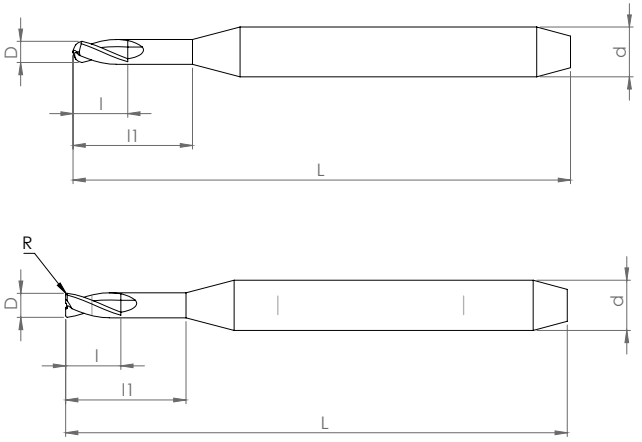
Reference	d	D	l1	Z	Geometry
T650-3NF0504	6	0,5	4	3	
T650-3NF1508	6	1,5	8	3	
T650-3NF1516	6	1,5	16	3	
T650-4NF1512	6	1,5	12	4	
T650-4NF1516	6	1,5	16	4	
T650-4NF2010	6	2	10	4	

Reference	d	R	D	l1	Z	Geometry
T650-2NT201008	6	0,2	1	8	1	
T650-2NT201512	6	0,2	1,5	12	1,5	
T650-2NT201516	6	0,2	1,5	16	1,5	
T650-2NT081508	6	0,08	1,5	8	1,5	
T650-2NT081516	6	0,08	1,5	16	1,5	
T650-4NT202016	6	0,2	1,5	16	1,5	
T650-4NT993015	6	1	3	15	1,5	

Designed for maximum productivity with CoCr and titanium.
The combination of high helix angle with TiSi+ coating enables exceptional durability and cutting speeds even in dry milling. Optimised for machining complex titanium, nickel and CoCr alloys.

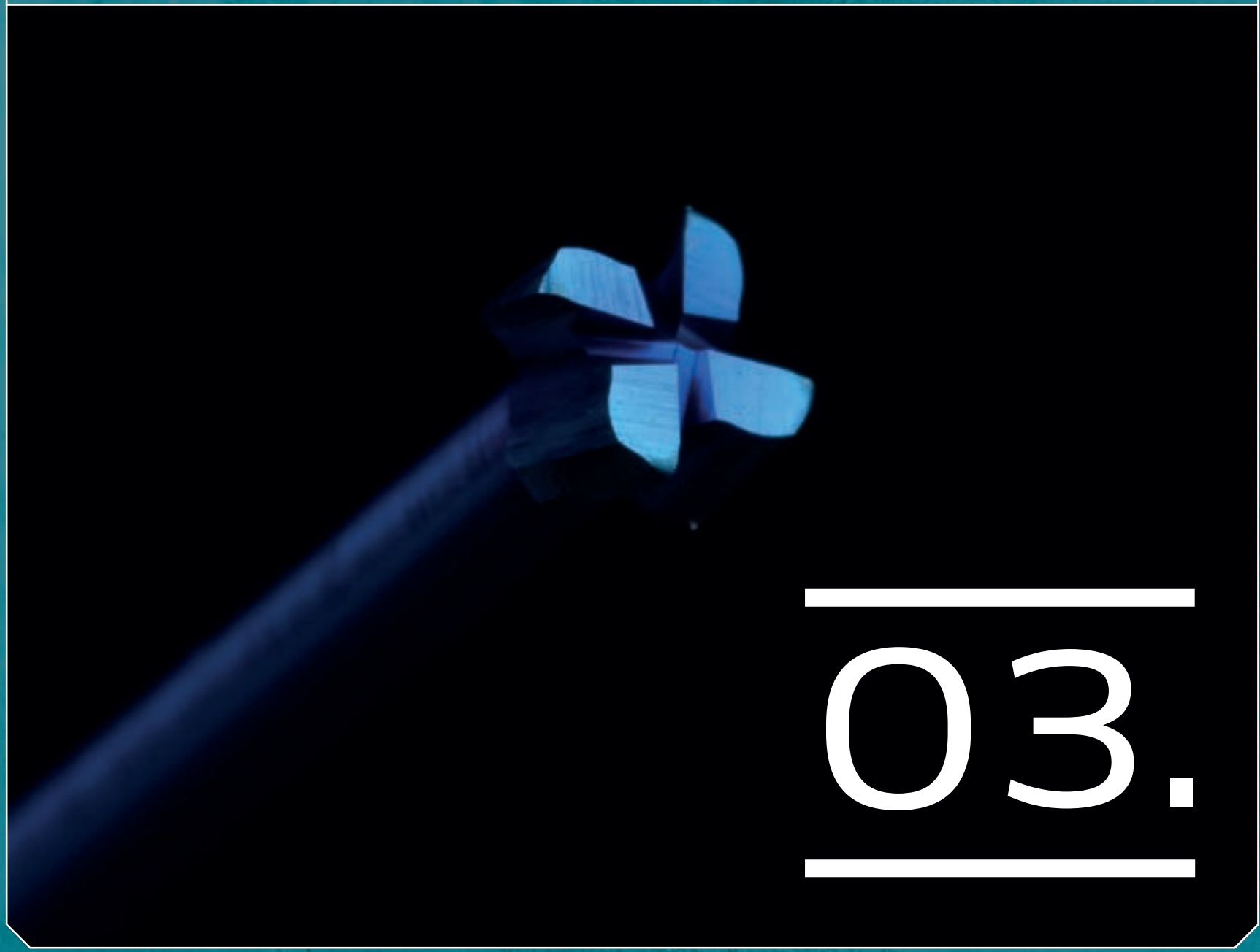
Uses: CoCr, Titanium alloys, Nickel alloys, Pre-sintered CoCr

PRODUCT COMING SOON



varioaxis®

by PARAGON TOOLS



03.

PMMA, PEEK

Reference	Shank	Geometry	Coatings	Z
VAN616	6	Varioaxis	TISI +	4
VAN618	6	Varioaxis	TISI +	4
VAN620	6	Varioaxis	TISI +	4
VAN416	4	Varioaxis	TISI +	4
VAN418	4	Varioaxis	TISI +	4
VAN420	4	Varioaxis	TISI +	4
VAN316	3	Varioaxis	TISI +	4
VAN618	3	Varioaxis	TISI +	4
VAN620	3	Varioaxis	TISI +	4

IMES ICORE

Reference	Shank	Geometry	Coatings	Z
VAI616	6	Varioaxis	TISI +	4
VAI618	6	Varioaxis	TISI +	4
VAI620	6	Varioaxis	TISI +	4
VAI316	3	Varioaxis	TISI +	4
VAI618	3	Varioaxis	TISI +	4
VAI620	3	Varioaxis	TISI +	4

YENADENT

Reference	Shank	Geometry	Coatings	Z
VAY416	4	Varioaxis	TISI +	4
VAY418	4	Varioaxis	TISI +	4
VAY420	4	Varioaxis	TISI +	4

VHF

Reference	Shank	Geometry	Coatings	Z
VAV316	3	Varioaxis	TISI +	4
VAV318	3	Varioaxis	TISI +	4
VAV320	3	Varioaxis	TISI +	4

DENTAL MACHINE

Reference	Shank	Geometry	Coatings	Z
VAD416	4	Varioaxis	TISI +	4
VAD418	4	Varioaxis	TISI +	4
VAD420	4	Varioaxis	TISI +	4
VAD316	3	Varioaxis	TISI +	4
VAD318	3	Varioaxis	TISI +	4
VAD320	3	Varioaxis	TISI +	4

variaxis®

by PARAGON TOOLS

IMPLANT	CONNETION	PLATFORM	SCAN BOY	ANALOG	VARIOAXIS® SCREW	VARIOAXIS® TOOL	
NOBEL BIOCARE	BRANEMARK	NP	NB-BNP	NB-ANP	NB-SNP	Shank 3	VA316
						Shank 4	VA416
						Shank 6	VA616
		RP	NB-BRP	NB-ARP	NB-SRP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620
		WP	NB-BWP	NB-AWP	NB-SWP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620
	REPLACE	NP	NR-BNP	NR-ANP	NR-SNP	Shank 3	VA318
						Shank 4	VA418
						Shank 6	VA618
		RP	NR-BRP	NR-ARP	NR-SRP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620
		WP	NR-BWP	NR-AWP	NR-SWP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620
	ACTIVE	NP	NA-BNP	NA-ANP	NA-SNP	Shank 3	VA316
						Shank 4	VA416
						Shank 6	VA616
		RP	NA-BRP	NA-ARP	NA-SRP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620
	MULTI UNIT	RP	NM-BRP	NM-ARP	NM-SRP	Shank 3	VA316
						Shank 4	VA416
						Shank 6	VA616

IMPLANT	CONNETION	PLATFORM	SCAN BOY	ANALOG	VARIOAXIS® SCREW	VARIOAXIS® TOOL	
ZIMMER	INTERNAL HEX	NP	ZI-BNP	ZI-ANP	ZI-SRP	Shank 3	VA318
						Shank 4	VA418
						Shank 6	VA618
		RP	ZI-BRP	ZI-ARP	ZI-SRP	Shank 3	VA318
						Shank 4	VA418
						Shank 6	VA618
		WP	ZI-BWP	ZI-AWP	ZI-SRP	Shank 3	VA318
						Shank 4	VA418
						Shank 6	VA618
STRAUMAN	TISSUE LEVEL	RP	ST-BNP	ST-ANP	ST-SNP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620
			ST-BRP	ST-ARP	ST-SRP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620
		WP	ST-BWP	ST-AWP	ST-SWP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620
	BONE LEVEL	NP	SB-BNP	SB-ANP	SB-SNP	Shank 3	VA316
						Shank 4	VA416
						Shank 6	VA616
		RP	SB-BRP	SB-ARP	SB-SRP	Shank 3	VA316
						Shank 4	VA416
						Shank 6	VA616
ASTRA	OSSEO SPEED	RP	AO-BRP	NM-ARP	NM-SRP	Shank 3	VA316
						Shank 4	VA416
						Shank 6	VA616
		RP	AO-BWP	AO-AWP	AO-SWP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620

IMPLANT	CONNETION	PLATFORM	SCAN BODY	ANALOG	VARIOAXIS® SCREW	VARIOAXIS® TOOL	
3I	OSSEOTITE	NP	IO-BNP	IO-ANP	NB-SRP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620
		RP	NB-BRP	NB-ARP	NB-SRP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620
		WP	IO-BWP	IO-AWP	NB-SRP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620
	CERTAIN	NP	IC-BNP	IC-ANP	IC-SRP	Shank 3	VA316
						Shank 4	VA416
						Shank 6	VA616
		RP	IC-BRP	IC-ARP	IC-SRP	Shank 3	VA316
						Shank 4	VA416
						Shank 6	VA616
		WP	IC-BWP	IC-AWP	IC-SRP	Shank 3	VA316
						Shank 4	VA416
						Shank 6	VA616
Klockner	SK2	RP	KS-BRP	KS-ARP	KS-SRP	Shank 3	VA318
						Shank 4	VA418
						Shank 6	VA618
	ESSENTIAL	RP	KE-BRP	KE-ARP	KE-SRP	Shank 3	VA318
						Shank 4	VA418
						Shank 6	VA618

IMPLANT	CONNETION	PLATFORM	SCAN BODY	ANALOG	VARIOAXIS® SCREW	VARIOAXIS® TOOL	
BTI	Externa	NP	BE-BNP	BE-ARP	BE-SRP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620
		RP	NB-BRP	NB-ARP	NB-SRP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620
	Interna	RP	BI-BRP	BI-ARP	BI-SRP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620
		WP	BI-BWP	BI-AWP	BI-SRP	Shank 3	VA316
						Shank 4	VA416
						Shank 6	VA616
MIS	Seven	NP	MI-ANP	MI-ANP	MI-SRP	Shank 3	VA316
						Shank 4	VA416
						Shank 6	VA616
			ZI-BRP		ZI-SRP	Shank 3	VA318
						Shank 4	VA418
						Shank 6	VA618
Sweden & Martina	Premium Kohno	MP	SP-BMP	SP-ANP	SP-SMP	Shank 3	VA318
						Shank 4	VA418
						Shank 6	VA618
		NP	SP-BNP	SP-ANP	SP-SNP	Shank 3	VA318
						Shank 4	VA418
						Shank 6	VA618
		RP	SP-BRP	SP-ARP	SP-SRP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620
		WP	SP-BWP	SP-AWP	SP-SWP	Shank 3	VA320
						Shank 4	VA420
						Shank 6	VA620

VA-TRW / Screw Driver

CUTTING CONDITIONS

04.

If you need help with cutting conditions, contact us and our engineers will give you the necessary assistance to adjust the conditions and optimise the milling performance.

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SPAIN

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info@paragon.tools
www.paragoon.tools