CAD/CAM TECHNOLOGY

Product overview tools and accessories

DENTAL Concept Systems

CAD/CAM TOOLS

and accessories

group bredent

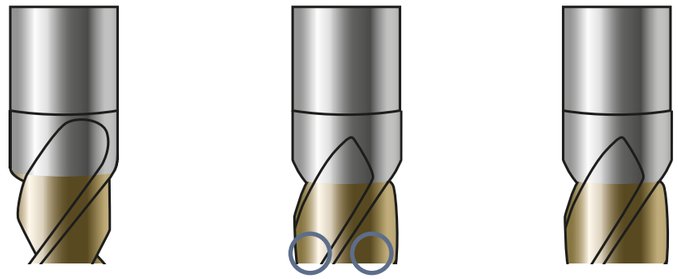
D00070/ 2021119

DCS CAD/CAM TOOLS

precision with a system

Milling tools from Dental Concept Systems are for the processing of all commercially available dental materials and have been developed exclusively for dental automation. DC milling tools are adapted directly to the requirements of the milling systems from Dental Concept Systems and provide process reliability for dental technicians using a wide variety of materials. The substrate. cutting edge geometry. finishing treatment and coating have been adapted to suit a diverse range of materials and developed taking into account today's modern milling strategies and CAM software templates. The clear colour coding guides the dental technician reliably through the tools lines. by matching the tools with their respective applications to optimize tool selection and avoid mistakes.

In addition to the BLUE LINE for CoCr. the TURQUOISE LINE for titanium and the GREEN LINE for glass/ceramic processing. Dental Concept Systems offers milling tools for the processing of zirconium oxides with 3 different coatings. Depending on the type and quality zirconium oxide. different tools are used to deliver precise milling.
The SILVER LINE offers polished cutting edges for durable premium materials. the RED LINE offers secure processing of translucent zirconium oxides. the YELLOW LINE offers longer service life and is also suitable for the processing of PMMA. Composite and PEEK or similar materials.
Thanks to the innovative cutting geometry. the processing of PMMA. PEEK and other thermoplastic materials in dry processing is made possible by the ORANGE LINE.



Ball-end | Bull-nose | Flat

Formula		Parameter
Cutting speed	$V_c = \frac{\pi * d * n}{1000}$	V_c = Cutting speed (mm/min) d = Tool diameter (mm) n = Speed (rpm)
Feed speed	$V_f = f_z * n * z$	V_f = Feed speed(mm/min) f_z = Tooth feed (mm/min) n = Speed (rpm) z = Tooth number (-)
Cutting capacity	$P_c = \frac{Q}{V_{sp}}$	P_c = Cutting capacity (kW) Q = Chip volume per unit time (cm3/min) V_{sp} = Spec. chip-cutting volume (cm3/min/kW)
Material removal rate	$Q = a_e * a_p * v_f$	Q = Chip volume per unit time (cm3/min) a_e = Radial working engagement (mm) a_p = Cutting depth (mm) v_f = Feed speed (mm/min)

CAD/CAM ACCESSORIES

BLUE LINE CoCr

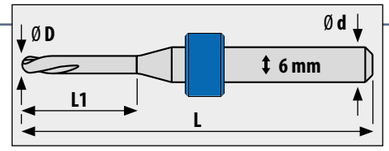
Machining of CoCr

The cutting edge geometry of these tools is designed to cope with high stress during hard machine cutting.
The BLUE LINE coating improves resistance to abrasion and features an impressive resistance to oxidation and hot hardness. The very low friction value of the tools reduces heat development and milling forces at the cutting edges. Flat milling bits for the machining of abutments and bridges as well as. high-feeding-rate milling bits for speed-roughing are available.

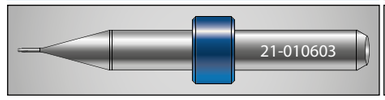
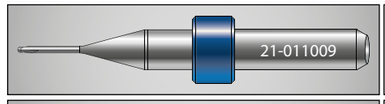
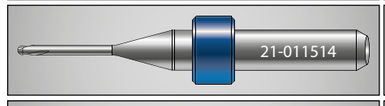
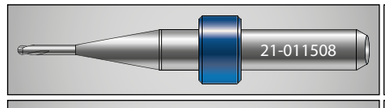
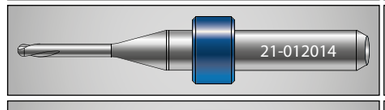
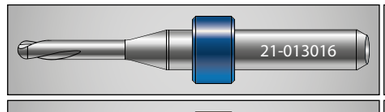
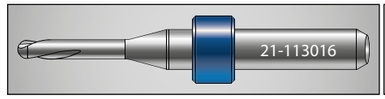
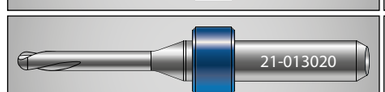
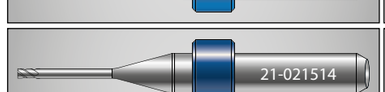
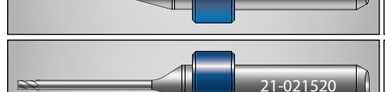
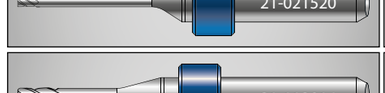
The machining of CoCr presents a particular challenge for the milling tools. Dental Concept Systems tools are designed for the dry machining of restorations and are suitable in quality and shape for the production of primary and secondary parts as well as for large bar constructions. Geometries and coatings are no coincidence but the result of many years of experience with the DCS milling systems and the software components developed in-house.

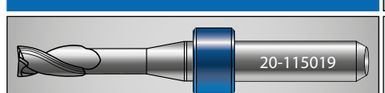
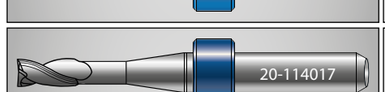
Grave errors can be made when purchasing CoCr blanks.
Non-machinable constituents or inhomogeneous inclusions can quickly ruin a complete set of milling burs and vastly overheat the milling areas.
The consequential damages outweigh any offer of savings.

IMPORTANT NOTICE!



CoCr

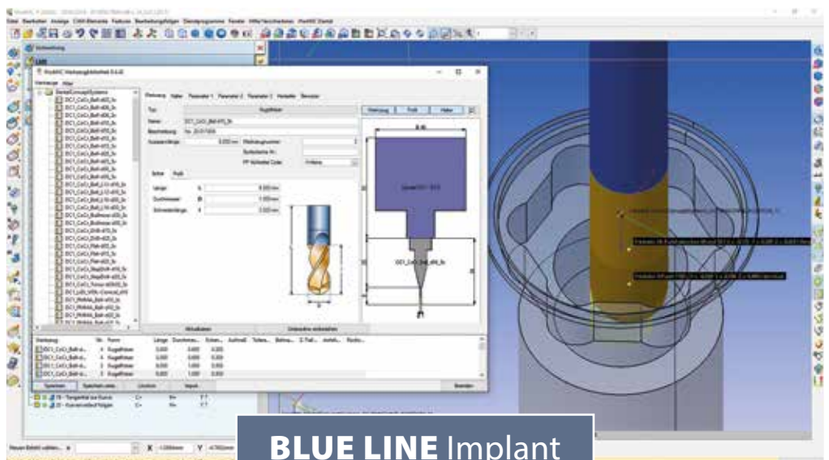
BLUE LINE CoCr	Type of tool	Milling materials	Ø Shank **d**	Cutting edge **D**	Length **L**	Clearance **L1**	Cutting edges **z**
 21-010603	Ball-end milling tool	CoCr	6 mm	0.6 mm	52 mm	3 mm	2
 21-011009	Ball-end milling tool	CoCr	6 mm	1.0 mm	52 mm	9 mm	2
 21-011514	Ball-end milling tool	CoCr	6 mm	1.5 mm	52 mm	14 mm	2
 21-011508	Ball-end milling tool quattro cut	CoCr	6 mm	1.5 mm	52 mm	8 mm	4
 21-012014	Ball-end milling tool	CoCr	6 mm	2.0 mm	52 mm	14 mm	2
 21-013016	Ball-end milling tool	CoCr	6 mm	3.0 mm	52 mm	16 mm	2
 21-113016	Ball-end milling tool quattro cut	CoCr	6 mm	3.0 mm	52 mm	16 mm	4
 21-013020	Ball-end milling tool	CoCr	6 mm	3.0 mm	52 mm	20 mm	2
 21-021514	Flat milling tool for bars and abutments	CoCr	6 mm	1.5 mm	52 mm	14 mm	2
 21-021520	Flat milling tool for bars and abutments	CoCr	6 mm	1.5 mm	52 mm	20 mm	2
 21-113014	High-feeding-rate milling tool for fast-roughing	CoCr	6 mm	3.0 mm	52 mm	14 mm	4

BLUE LINE Measure	Type of tool	Milling materials	Ø Shank **d**	Cutting edge **D**	Length **L**	Clearance **L1**	Cutting edges **z**
 20-115019	Milling tool for validated milling cutter bodies	DC ALU	6 mm	5.0 mm	52 mm	19 mm	3
 20-114017	Milling tool for validated milling cutter bodies	DC ALU	6 mm	4.0 mm	52 mm	16.5 mm	3

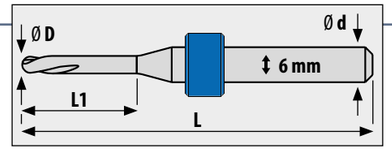
BLUE LINE Implant

Machining of implant-borne geometries in CoCr

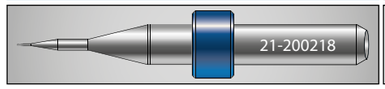
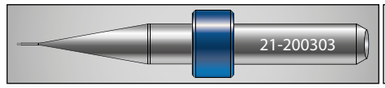
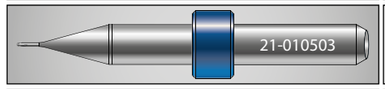
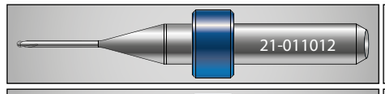
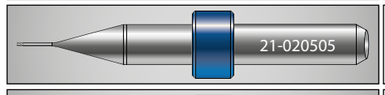
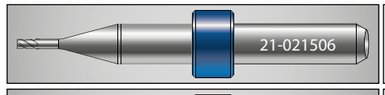
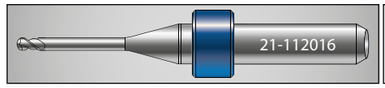
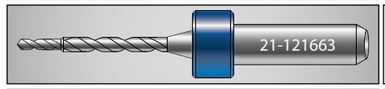
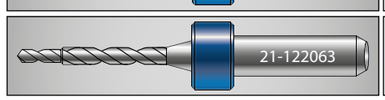
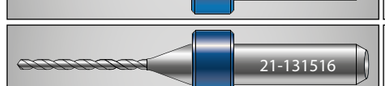
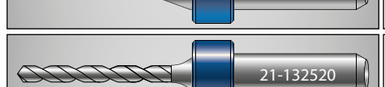
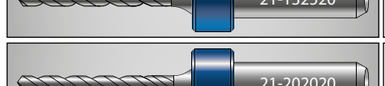
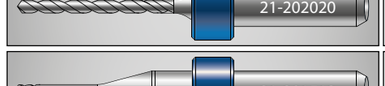
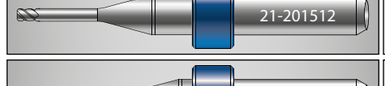
The vast experience of the DCS developers is reflected in the BLUE LINE for implants . Tools that enable the user to mill implant-borne superstructures direct from the blank are without question the icing on the cake. Apart from Ball-endmilling bits, flat milling bits and torus milling bits, the product range offers drill bits and stepped drill bits for Implant prosthetics. These tools share the high quality of their counterparts and also come with the high-grade BLUE LINE coating. These tools are intended for advanced CAD/CAM users only.



BLUE LINE Implant
Version 3.0



CoCr

BLUE LINE Implant	Type of tool	Milling materials	Ø Shank **d**	Cutting edge **D**	Length **L**	Clearance **L1**	Cutting edges **z**
 21-200218	Ball-end milling tool	CoCr	6 mm	0.18 mm	52 mm	2 mm	2
 21-200303	Ball-end milling tool	CoCr	6 mm	0.3 mm	52 mm	3 mm	2
 21-010503	Ball-end milling tool	CoCr	6 mm	0.5 mm	52 mm	3 mm	2
 21-011012	Ball-end milling tool	CoCr	6 mm	1.0 mm	52 mm	12 mm	2
 21-020505	Flat milling tool Implant	CoCr	6 mm	0.5 mm	52 mm	5 mm	2
 21-021506	Flat milling tool Implant	CoCr	6 mm	1.5 mm	52 mm	6 mm	3
 21-022006	Flat milling tool Implant	CoCr	6 mm	2.0 mm	52 mm	6 mm	3
 21-112016	Bull-nose milling tool Implant	CoCr	6 mm	2.0 mm	52 mm	16 mm	3
 21-121663	Stepped drill bit Implant -MA)	CoCr	6 mm	1.6 mm	52 mm	6.35 mm	2
 21-122063	Stepped drill bit Implant -MA)	CoCr	6 mm	2.0 mm	52 mm	6.35 mm	2
 21-131516	Drill bit Implant	CoCr	6 mm	1.5 mm	52 mm	16 mm	2
 21-132520	Bohrer Implant	CoCr	6 mm	2.5 mm	52 mm	20 mm	2
 21-202020	Drill bit Implant	CoCr	6 mm	2.0 mm	52 mm	20 mm	2
 21-201512	Bull-nose milling tool Implant	CoCr	6 mm	1.5 mm (r 0.2)	52 mm	12 mm	3
 21-201516	Bull-nose milling tool Implant	CoCr	6 mm	1.5 mm (r 0.2)	52 mm	16 mm	3

TURQUOISE LINE Titanium

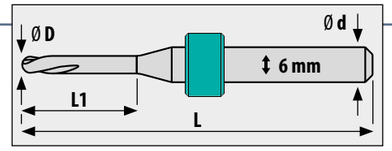
Machining of pure titanium and titanium

The geometry and coating of TURQUOISE LINE tools are specially tailored to the machining of titanium and enable precise milling results when used in conjunction with Metall Coolant 014.
The main areas of use of the TURQUOISE LINE are high-quality milled surfaces without discolouration for implants, supraconstructions, prefaces and abutments.

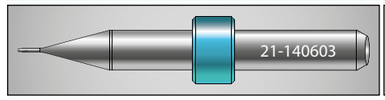
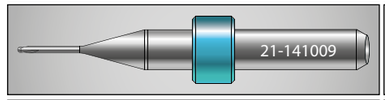
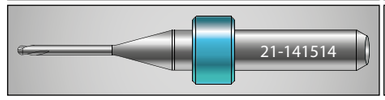
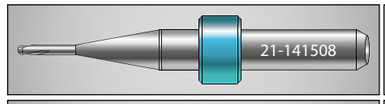
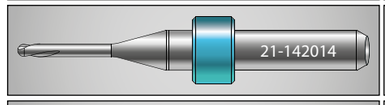
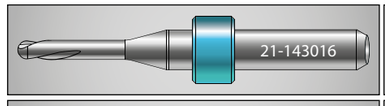
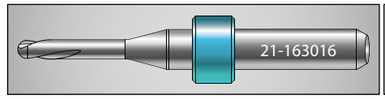
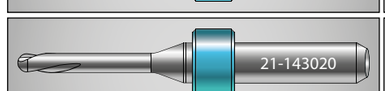
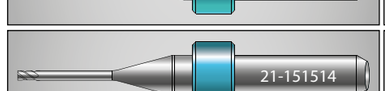
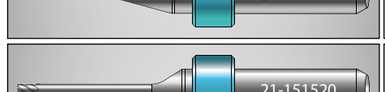
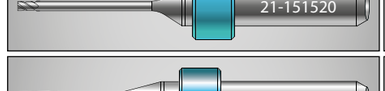
A special coating was specifically developed to ensure precise machining, long service life and alignment to the material properties when wet machining titanium. The control software and CAM software both take into account, the special geometry and angle of inclination of the cutting edges to deliver the best result.

Milling tools, used for titanium,
may not be used for CoCr afterwards.
The cutting edges of the tools change due to the properties
of pure titanium and titanium alloys.
Therefore: once a titanium milling bit – always a titanium milling bit!

PLEASE NOTE!

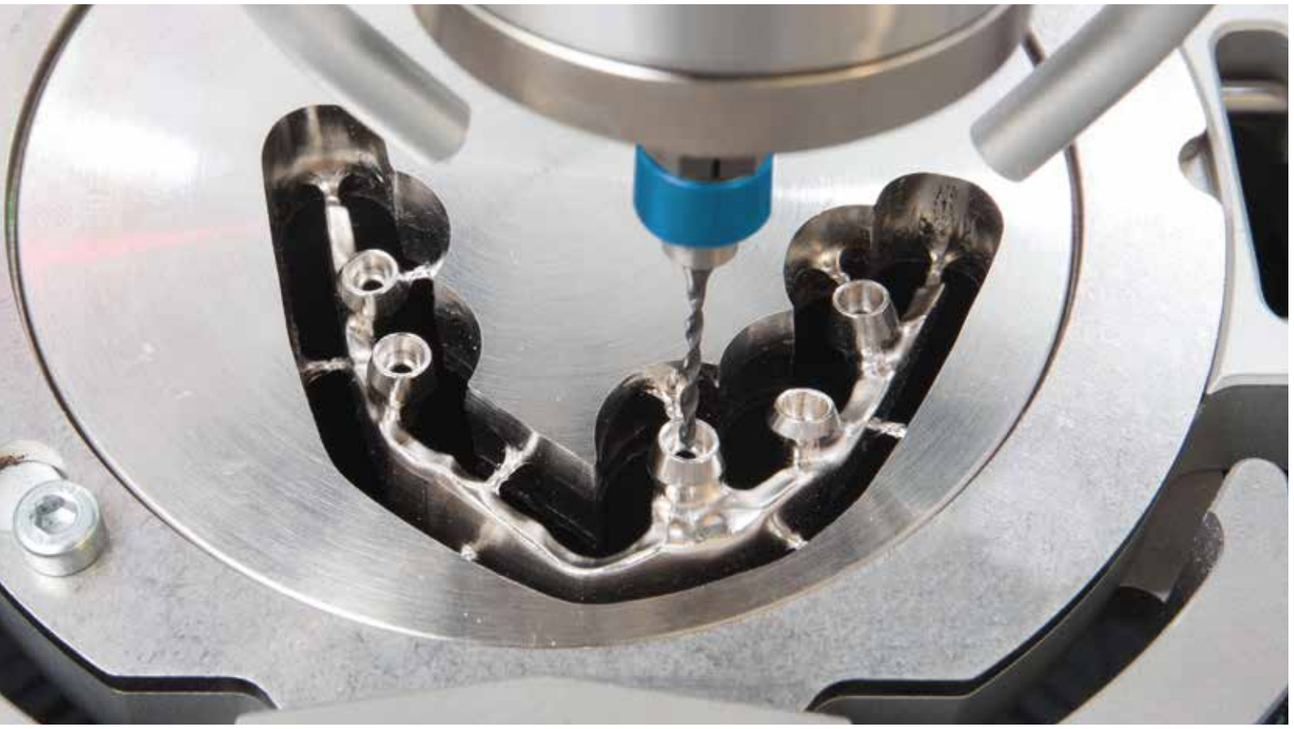


TITANIUM

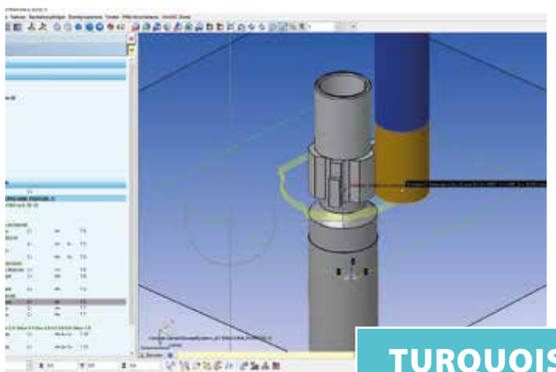
TURQUOISE LINE Titanium	Type of tool	Milling materials	Ø Shank **d**	Cutting edge **D**	Length **L**	Clearance **L1**	Cutting edges **z**
 21-140603	Ball-end milling tool	Titanium	6 mm	0.6 mm	52 mm	3 mm	2
 21-141009	Ball-end milling tool	Titanium	6 mm	1.0 mm	52 mm	9 mm	2
 21-141514	Ball-end milling tool	Titanium	6 mm	1.5 mm	52 mm	14 mm	2
 21-141508	Ball-end milling tool quattro cut	Titanium	6 mm	1.5 mm	52 mm	8 mm	4
 21-142014	Ball-end milling tool	Titanium	6 mm	2.0 mm	52 mm	14 mm	2
 21-143016	Ball-end milling tool	Titanium	6 mm	3.0 mm	52 mm	16 mm	2
 21-163016	Ball-end milling tool quattro cut	Titanium	6 mm	3.0 mm	52 mm	16 mm	4
 21-143020	Ball-end milling tool	Titanium	6 mm	3.0 mm	52 mm	20 mm	2
 21-151514	Flat milling tool for bars and abutments	Titanium	6 mm	1.5 mm	52 mm	14 mm	2
 21-151520	Flat milling tool for bars and abutments	Titanium	6 mm	1.5 mm	52 mm	20 mm	2
 21-163014	High-feeding-rate milling tool for fast-roughing	Titanium	6 mm	3.0 mm	52 mm	14 mm	4

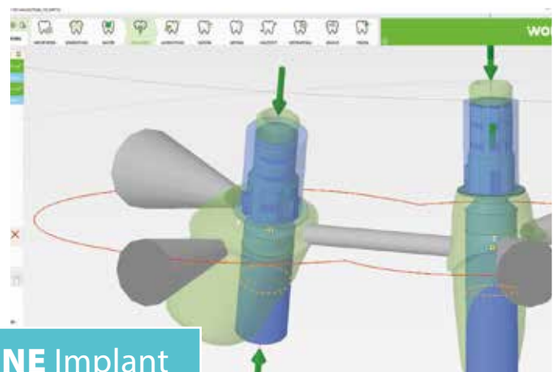
TURQUOISE LINE Implant

Machining of implant-borne geometries in titanium

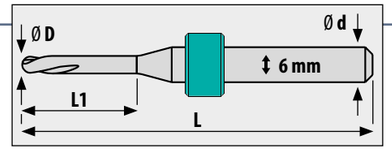


Since titanium is the preferred material in implantology, it should come as no surprise that Dental Concept Systems places a particular emphasis on these tools throughout their systems. As with the CoCr tools in the BLUE LINE, important tools for implants are offered for use with titanium in the TURQUOISE LINE. Apart from Ball-endmilling bits, flat milling bits and torus milling bits, the product range offers drill bits and stepped drill bits for implants. Naturally the bits are intended for use with "wet" machining, which is imperative when machining titanium. When machine pure titanium, the TURQUOISE LINE ensures reliable production through the long term stability and accuracy of the tools cutting edges.

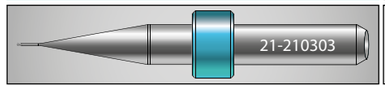
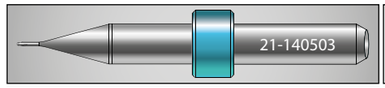
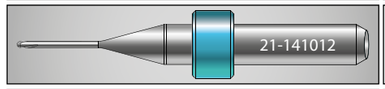
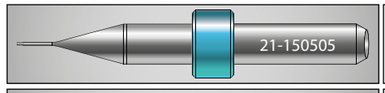
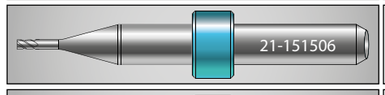
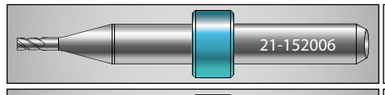
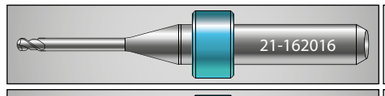
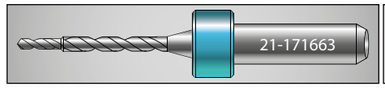
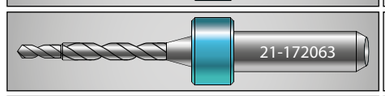
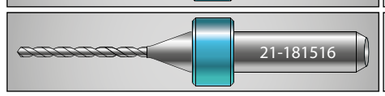
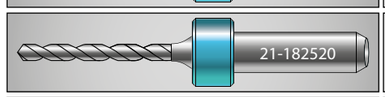
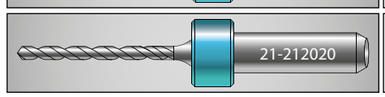
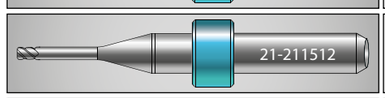
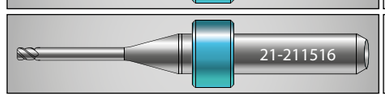




TURQUOISE LINE Implant
Version 3.0



TITANIUM

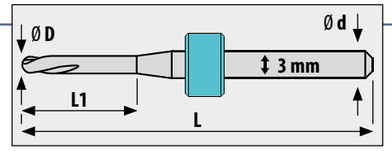
TURQUOISE LINE Implant	Type of tool	Milling materials	Ø Shank **d**	Cutting edge **D**	Length **L**	Clearance **L1**	Cutting edges **z**
 21-210303	Ball-end milling tool Implant	Titanium	6 mm	0.3 mm	52 mm	3 mm	2
 21-140503	Ball-end milling tool Implant	Titanium	6 mm	0.5 mm	52 mm	3 mm	2
 21-141012	Ball-end milling tool Implant	Titanium	6 mm	1.0 mm	52 mm	12 mm	2
 21-150505	Flat milling tool Implant	Titanium	6 mm	0.5 mm	52 mm	5 mm	2
 21-151506	Flat milling tool Implant	Titanium	6 mm	1.5 mm	52 mm	6 mm	3
 21-152006	Flat milling tool Implant	Titanium	6 mm	2.0 mm	52 mm	6 mm	3
 21-162016	Bull-nose milling tool Implant	Titanium	6 mm	2.0 mm (r 0.2)	52 mm	16 mm	3
 21-171663	Stepped drill bit Implant Implant (-MA)	Titanium	6 mm	1.6 mm	52 mm	6.35 mm	2
 21-172063	Stepped drill bit Implant Implant (-MA)	Titanium	6 mm	2.0 mm	52 mm	6.35 mm	2
 21-181516	Drill bit Implant	Titanium	6 mm	1.5 mm	52 mm	16 mm	2
 21-182520	Drill bit Implant	Titanium	6 mm	2.5 mm	52 mm	20 mm	2
 21-212020	Drill bit Implant	Titanium	6 mm	2.0 mm	52 mm	20 mm	2
 21-211512	Bull-nose milling tool Implant	Titanium	6 mm	1.5 mm (r 0.2)	52 mm	12 mm	3
 21-211516	Bull-nose milling tool Implant	Titanium	6 mm	1.5 mm (r 0.2)	52 mm	16 mm	3

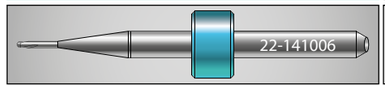
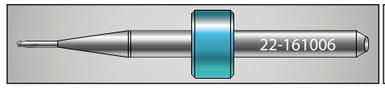
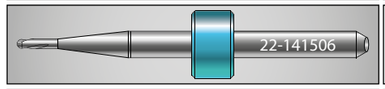
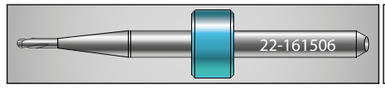
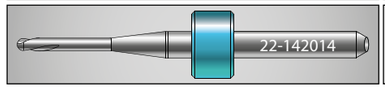
TURQUOISE LINE Titan prefab

Machining of prefab geometries in titanium

The manufacture of titanium abutments in the prefab process requires particular precision in the system. The DCX system has a prefab calibration which tactile scans every restoration and stores the exact position of the objects in the control. Die hohe Genauigkeit, die

The high level of accuracy achieved by this process is enhanced by the seamless coordination in the manufacture of the TURQUOISE LINE tools. Modern compact devices are in no way inferior to large free-standing devices in terms of precision and safety. Process-reliable tools are a basic requirement.



TURQUOISE LINE Titanium prefab	Type of tool	Milling materials	Ø Shank **d**	Cutting edge **D**	Length **L**	Clearance **L1**	Cutting edges **z**
 22-141006	Ball-end milling tool	Titanium prefab	3 mm	1.0 mm	52 mm	6 mm	2
 22-161006	Quattro Cut Ball-end milling tool	Titanium prefab	3 mm	1.0 mm	52 mm	6 mm	4
 22-141506	Ball-end milling tool	Titanium prefab	3 mm	1.5 mm	52 mm	6 mm	2
 22-161506	Ball-end milling tool	Titanium prefab	3 mm	1.5 mm	52 mm	6 mm	4
 22-142014	Ball-end milling tool	Titanium prefab	3 mm	2.0 mm	52 mm	14 mm	3

 Sample illustration **22-141000**	**TURQUOISE LINE** Titanium prefab Set of 6	Set of 6 consisting of the following articles: 2 x 22-141006, 2 x 22-141506 and 2 x 22-142014

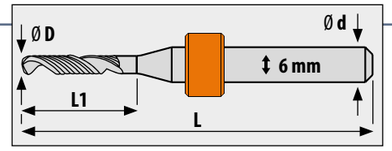
MORE QUALITY!

DCS stop rings are also made of industrial alloys for tools with 3 mm shank and are supplied with machine rings. Stop rings made of plastic or improper ringing with a "hand press" lead to unacceptable manufacturing tolerances.

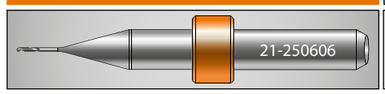
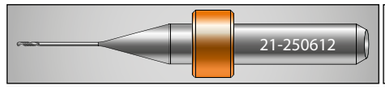
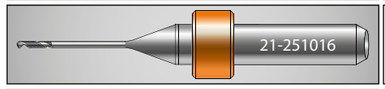
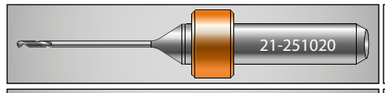
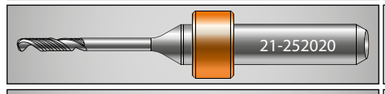
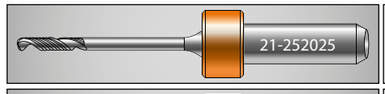
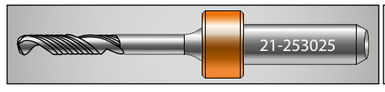
DC1™ DC3™ DC7™ Ø Shank: **6 mm**

ORANGE LINE bre.CAM cutter

Machining of thermoplastic materials



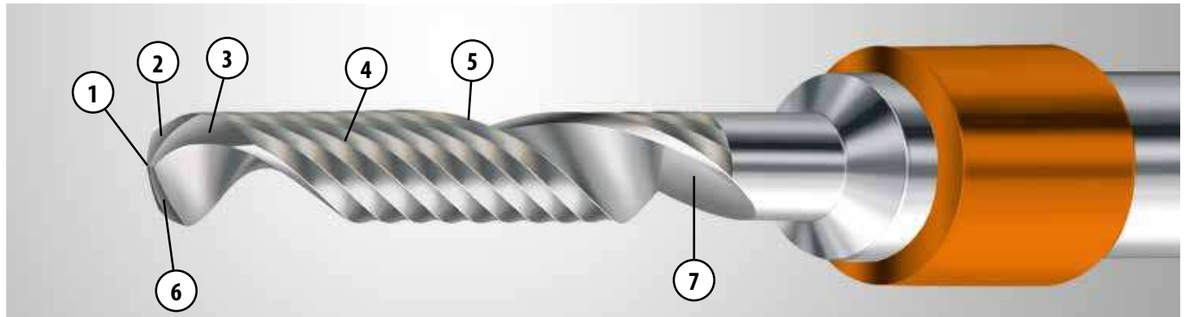
PA · POM · PC · **WAX** · PEEK · PMMA · COMPOSITE

ORANGE LINE bre.CAM cutter	Type of tool	Milling materials	Ø Shank **d**	Cutting edge **D**	Length **L**	Clearance **L1**	Cutting edges **z**
 21-250606	bre.CAM cutter	PA, POM, PC, Peek, PMMA, Composite	6 mm	0.6 mm	52 mm	6 mm	1
 21-250612	bre.CAM cutter	PA, POM, PC, Peek, PMMA, Composite	6 mm	0.6 mm	52 mm	12 mm	1
 21-251016	bre.CAM cutter	PA, POM, PC, Peek, PMMA, Composite	6 mm	1.0 mm	52 mm	16 mm	1
 21-251020	bre.CAM cutter	PA, POM, PC, Peek, PMMA, Composite	6 mm	1.0 mm	52 mm	20 mm	1
 21-252020	bre.CAM cutter	PA, POM, PC, Peek, PMMA, Composite	6 mm	2.0 mm	52 mm	20 mm	1
 21-252025	bre.CAM cutter	PA, POM, PC, Peek, PMMA, Composite	6 mm	2.0 mm	52 mm	25 mm	1
 21-253025	bre.CAM cutter	PA, POM, PC, Peek, PMMA, Composite	6 mm	3.0 mm	52 mm	25 mm	1

The innovative cutting geometry of the ORANGE LINE - bre.CAM cutters enables the dry processing of PMMA, PEEK and other thermoplastic materials in CNC milling machines.
Due to the low heat generation of the ORANGE LINE - bre. CAM cutter during the milling process, easily fusing materials can be machined without the need for water cooling. Warping of delicate structures is avoided. Even at a high feed rate, the ORANGE LINE - bre.CAM cutter generates a smooth surface on the workpiece thanks to its patented cutting of multiple rear reliefs. This saves time during the milling process and further processing.

Thanks to a special cutting geometry,
it is also possible to take thermoplastic materials,
which have properties which allow them to spread quickly
and clog up the tool, and mill them without water cooling.

ADVANTAGE!



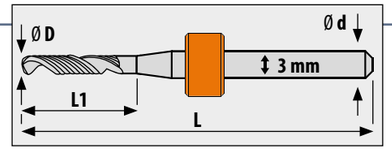
1. Radial relief angle divided into thirds to reduce heat when feeding into the milling process.
2. Relief angle divided into thirds to reduce heat when starting the milling process. Machined clearance shape in the half radius.
3. Side clearance that starts at the pull to optimise chip removal along the z-axis (immersion in the material).
4. Multiple rear reliefs to reduce heat generation.
5. Tapered, sharp cutting edge cutting for precise heat-reduced cutting.
6. Radial geometry shaping area, on one side to define the radius of the milling result.
7. Single-edged pull with tapered cutting angle for quick and coarse chip removal.

DCX™ Ø Shank: **3 mm**

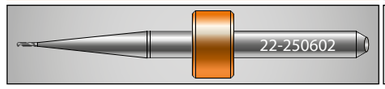
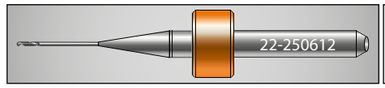
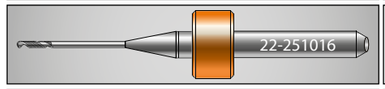
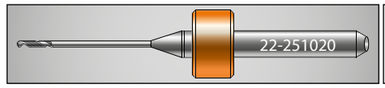
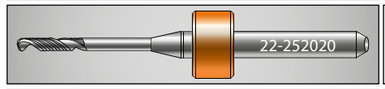
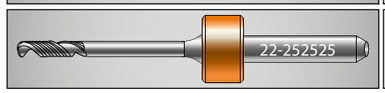
ORANGE LINE bre.CAM cutter

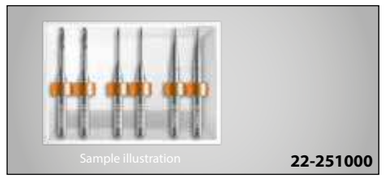
Machining of thermoplastic materials

The invention of the bre.CAM cutter has revolutionized the CAD / CAM production of thermoplastic materials. The particularly fine surfaces with dry machining were not possible before using these ORANGE LINE tools. The use of tools with 3 mm shank on the DCX systems completes the tool range and enables the compact systems to achieve the same manufacturing quality for all restorations as with extensive floor-standing devices. The fine chip formation enables a constant recovery of the chips even when using suction systems with limited suction power.



PA · POM · PC · **WAX** · PEEK · PMMA · COMPOSITE

ORANGE LINE bre.CAM cutter	Type of tool	Milling materials	Ø Shank **d**	Cutting edge **D**	Length **L**	Clearance **L1**	Cutting edges **z**
 22-250602	bre.CAM cutter	PA, POM, PC, Peek, PMMA, Composite	3 mm	0.6 mm	52 mm	2 mm	1
 22-250612	bre.CAM cutter	PA, POM, PC, Peek, PMMA, Composite	3 mm	0.6 mm	52 mm	12 mm	1
 22-251016	bre.CAM cutter	PA, POM, PC, Peek, PMMA, Composite	3 mm	1.0 mm	52 mm	16 mm	1
 22-251020	bre.CAM cutter	PA, POM, PC, Peek, PMMA, Composite	3 mm	1.0 mm	52 mm	20 mm	1
 22-252020	bre.CAM cutter	PA, POM, PC, Peek, PMMA, Composite	3 mm	2.0 mm	52 mm	20 mm	1
 22-252525	bre.CAM cutter	PA, POM, PC, Peek, PMMA, Composite	3 mm	2.5 mm	52 mm	25 mm	1

 Sample illustration **22-251000**	**ORANGE LINE** bre.CAM cutter Set of 6	Set of 6 consisting of the following items: 2 x 22-250602, 2 x 22-251016 and 2 x 22-252020

The use of tools with a large clearance requires a coordinated strategy in the CAM software, especially for milling cutters with a 3 mm shank. The DCS also uses industrial grade CAM software for the DCX systems!

GOOD TO KNOW!

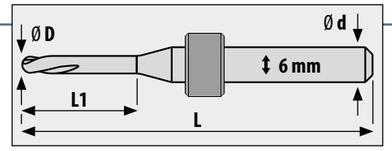
SILVER LINE

Machining of zirconium oxides and wax

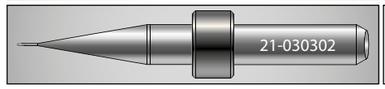
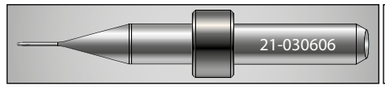
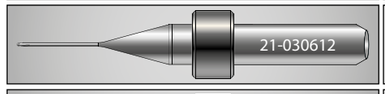
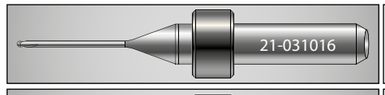
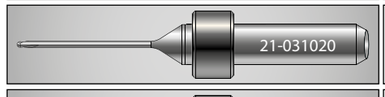
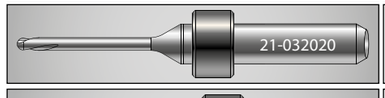
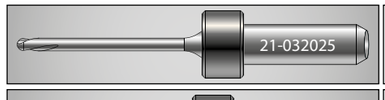
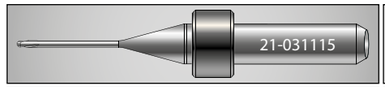
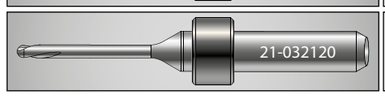
SILVER LINE tools are for the machining of unfired high-performance ceramics such as zirconium oxide and aluminium oxide. These uncoated tools feature a special geometry and refined surface quality. SILVER LINE tools can be combined with YELLOW LINE and RED LINE tools to enhance applications. Due to the polished cutting edges, a 0.3 mm tool and single-flute cutters are also available for the machining of high-performance waxes.

Uncoated cutting blades shine with their special sharpness and are not rounded off by a coating. Thus, the tools can be used very well in clearly presented areas. Even with sensitive zirconia, machining with only polished blades can provide advantageous results. The SILVER LINE completes the extensive assortment for the material Zirkon with three different lines.

Single-flute cutters for machining wax are also available. The special geometry of the wax cutter offers a large chip space and is particularly suitable for processing waxes for the press ceramic.



ZIRCONIA WAX

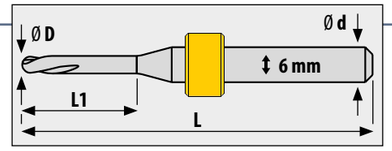
SILVER LINE	Type of tool	Milling materials	Ø Shank **d**	Cutting edge **D**	Length **L**	Clearance **L1**	Cutting edges **z**
 21-030302	Ball-end milling tool	Zirconia, Wax	6 mm	0.3 mm	52 mm	2 mm	2
 21-030606	Ball-end milling tool	Zirconia, Wax	6 mm	0.6 mm	52 mm	6 mm	2
 21-030612	Ball-end milling tool	Zirconia, Wax	6 mm	0.6 mm	52 mm	12 mm	2
 21-031016	Ball-end milling tool	Zirconia, Wax	6 mm	1.0 mm	52 mm	16 mm	2
 21-031020	Ball-end milling tool	Zirconia, Wax	6 mm	1.0 mm	52 mm	20 mm	2
 21-032020	Ball-end milling tool	Zirconia, Wax	6 mm	2.0 mm	52 mm	20 mm	2
 21-032025	Ball-end milling tool	Zirconia, Wax	6 mm	2.0 mm	52 mm	25 mm	2
 21-031115	Ball-end milling tool	Wax	6 mm	1.0 mm	52 mm	15 mm	1
 21-032120	Ball-end milling tool	Wax	6 mm	2.0 mm	52 mm	20 mm	1

Uncoated tools off er clear advantages.
This enables us to off er a milling bit in the SILVERLINE with a cutting edge of just 0.3 mm! This tool can be combined with all other tools and enables the machining of fi ssures or narrow cavities.

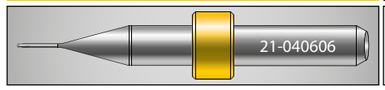
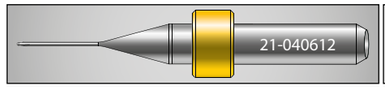
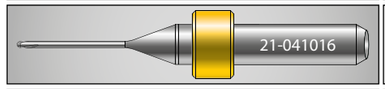
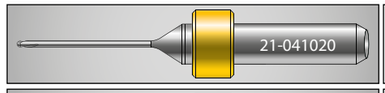
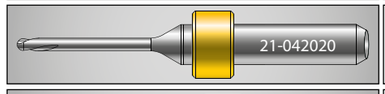
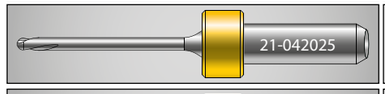
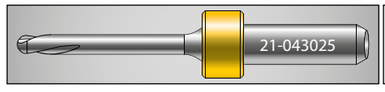
AESTHETICS PURE!

YELLOW LINE

Machining of all zirconium oxides, PMMA, composite and PEEK



ZIRCONIA — **WAX** — PMMA — COMPOSITE

YELLOW LINE	Type of tool	Milling materials	Ø Shank **d**	Cutting edge **D**	Length **L**	Clearance **L1**	Cutting edges **z**
 21-040606	Ball-end milling tool	Zirconia, Wax, PMMA, Composite	6 mm	0.6 mm	52 mm	6 mm	2
 21-040612	Ball-end milling tool	Zirconia, Wax, PMMA, Composite	6 mm	0.6 mm	52 mm	12 mm	2
 21-041016	Ball-end milling tool	Zirconia, Wax, PMMA, Composite	6 mm	1.0 mm	52 mm	16 mm	2
 21-041020	Ball-end milling tool	Zirconia, Wax, PMMA, Composite	6 mm	1.0 mm	52 mm	20 mm	2
 21-042020	Ball-end milling tool	Zirconia, Wax, PMMA, Composite	6 mm	2.0 mm	52 mm	20 mm	2
 21-042025	Ball-end milling tool	Zirconia, Wax, PMMA, Composite	6 mm	2.0 mm	52 mm	25 mm	2
 21-043025	Ball-end milling tool	Zirconia, Wax, PMMA, Composite	6 mm	3.0 mm	52 mm	25 mm	2

YELLOW LINE tools feature a special coating that ensures an extremely smooth surface finish and optimizes resistance to wear.

YELLOW LINE tools were specifically designed to produce high quality results when machining PMMA, COMPOSITES, PEEK, materials for occlusal splints, or when dry machining. YELLOW LINE tools can also be used to machine zirconium oxide or in wet machining applications, making them extremely versatile and perfectly suited for use with automation. The long service life from the „diamond like“ coating, combined with the versatility of this line results in an exceptional price/performance ratio. Furthermore, these the YELLOW LINE tools can be combined with the SILVER and RED LINES to further enhance machining applications.


Case by: Dental Design, Erlangen, Germany

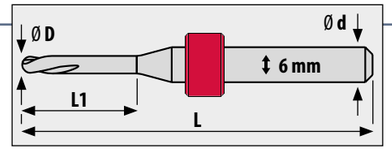

Case by: Dental Design, Erlangen, Germany

When machining Composite, PEEK and PMMA,
the inclination of the cutting edges of the milling tool
and its coating are important details if you wish to dry-mill.
The rule of thumb is: those who dry-mill see more!

SEE MORE!

RED LINE

Machining of zirconium oxides



RED LINE	Type of tool	Milling materials	Ø Shank **d**	Cutting edge **D**	Length **L**	Clearance **L1**	Cutting edges **z**
21-070606	Ball-end milling tool	Zirconia	6 mm	0.6 mm	52 mm	6 mm	2
21-070612	Ball-end milling tool	Zirconia	6 mm	0.6 mm	52 mm	12 mm	2
21-071012	Ball-end milling tool	Zirconia	6 mm	1.0 mm	52 mm	12 mm	2
21-071016	Ball-end milling tool	Zirconia	6 mm	1.0 mm	52 mm	16 mm	2
21-191016	Ball-end milling tool Zirconia special	Zirconia	6 mm	1.0 mm	52 mm	16 mm	3
21-071020	Ball-end milling tool	Zirconia	6 mm	1.0 mm	52 mm	20 mm	2
21-072018	Ball-end milling tool	Zirconia	6 mm	2.0 mm	52 mm	18 mm	2
21-072020	Ball-end milling tool	Zirconia	6 mm	2.0 mm	52 mm	20 mm	2
21-192020	Ball-end milling tool Zirconia special	Zirconia	6 mm	2.0 mm	52 mm	20 mm	3
21-072025	Ball-end milling tool	Zirconia	6 mm	2.0 mm	52 mm	25 mm	2
21-192025	Ball-end milling tool Zirconia special	Zirconia	6 mm	2.0 mm	52 mm	25 mm	3

The RED LINE coating was developed especially for translucent and sensitive zirconium oxides. Thanks to the particularly smooth nano-crystalline structure of the highly abrasion-resistant diamond coating, service life is increased considerably, especially with extremely abrasive materials. The associated reduction in cutting forces prevents chipping even in 5-axis high-speed machining and enables milling procedures with very fine edges.

For particularly demanding applications the RED LINE milling tools feature 3 cutting edges, giving them exceptional running smoothness for minimal vibration transmission during machining.
The high performance of RED LINE milling tools and their ability to remain in the system for continuous use, make them a very popular tool line among DCS System users machining zirconium.

The advantages of the RED LINE tools
lead to an exceptionally long tool life and homogeneous milling results.
Due to the long service life, there is an equally high price advantage compared
to conventional, uncoated or DLC-coated tools.
The set-up times and stocks of tools are drastically minimized.

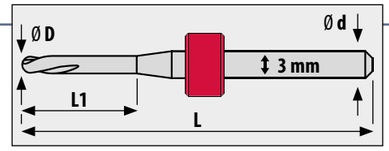
ADVANTAGE SYSTEM!

RED LINE

Machining of zirconium oxides

The DLC coating (“Diamond-Like-Carbon”, diamond-like carbon), which is widespread on the dental market, is a black carbon coating, which cannot be compared qualitatively with a real diamond coating. A pure DLC coating increases the service life compared to a non-coated tool by a factor of 0.3, i.e. 30%.

A real diamond coating, as can be found on RED LINE tools, is coated by means of CVD (“Chemical Vapor Deposition”). This extra strong real diamond coating increases the tool life compared to a non-coated tool by up to a factor of 4 or 400%.



RED LINE	Type of tool	Milling materials	Ø Shank **d**	Cutting edge **D**	Length **L**	Clearance **L1**	Cutting edges **z**
22-070302	Ball-end milling tool	Zirconia	3 mm	0.3 mm	52 mm	2 mm	2
22-070606	Ball-end milling tool	Zirconia	3 mm	0.6 mm	52 mm	6 mm	2
22-071016	Ball-end milling tool	Zirconia	3 mm	1.0 mm	52 mm	16 mm	2
22-071020	Ball-end milling tool	Zirconia	3 mm	1.0 mm	52 mm	20 mm	2
22-072020	Ball-end milling tool	Zirconia	3 mm	2.0 mm	52 mm	20 mm	2
22-072025	Ball-end milling tool	Zirconia	3 mm	2.0 mm	52 mm	25 mm	2
22-071516	Torusfräser Implant	Zirconia	3 mm	1.5 mm (r 0.2)	52 mm	16 mm	3

Sample illustration **22-071000**	**RED LINE** Set of 6	Set of 6 consisting of the following articles: 2 x 22-070606, 2 x 22-071016 and 2 x 22-072020

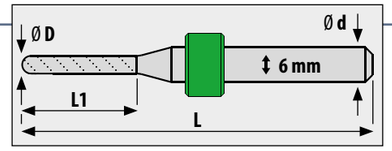
GREEN LINE

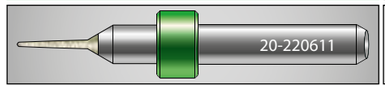
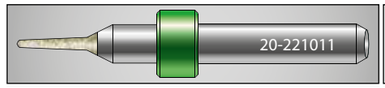
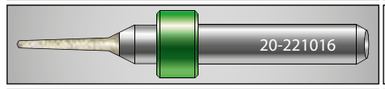
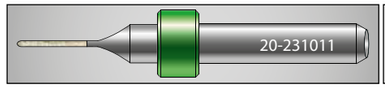
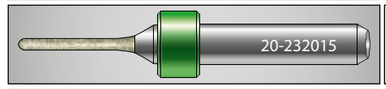
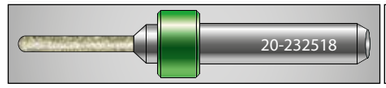
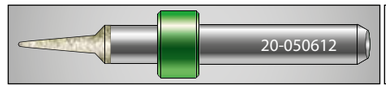
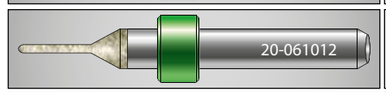
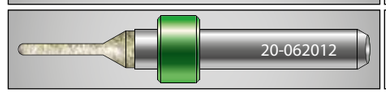
Grinding of ceramic materials

The GREEN LINE`s thick-film diamond mounted points enable the secure machining of all glass ceramics commonly available on the dental market and are also suitable for grinding new composite types and hybrid ceramics.

The different shapes and qualities enable versatile use in wet processing of the blocks. Special procedures in the CAM software enable effective use in grinding ceramic materials and prevent damage to the restorations and brackets. Only by coordinating the workpiece holders, materials and the various software systems are permanently successful results to ensure.

*The tools are designed for machining with the **Ceramic Coolant 016** cooling lubricant or the cooling lubricant **Univeral Coolant 018**.*
*When working with water **without cooling abrasive**, damage to the milling systems due to corrosion occurs.*
The coolant supply to the spindle must always be aligned centrally on the grinding tool.



GREEN LINE	Type of tool	Milling materials	Ø Shank **d**	Cutting edge **D**	Length **L**	Clearance **L1**	Bindung Grain
 20-220611	Conical grinder	Blue Blanks. Composite	6 mm	0.6 mm	50 mm	11 mm	Fine grain electroplating on carbide
 20-221011	Conical grinder	Blue Blanks. Composite	6 mm	1.0 mm	50 mm	11 mm	Fine grain electroplating on carbide
 20-221016	Conical grinder	Blue Blanks. Composite	6 mm	1.0 mm	50 mm	16 mm	Fine grain electroplating on carbide
 20-231011	Grinding pin	Blue Blanks. Composite	6 mm	1.0 mm	50 mm	11 mm	Fine grain electroplating on carbide
 20-232015	Grinding pin	Blue Blanks. Composite	6 mm	2.0 mm	50 mm	15 mm	Fine grain electroplating on carbide
 20-232518	Grinding pin	Blue Blanks. Composite	6 mm	2.5 mm	50 mm	18 mm	Fine grain electroplating on carbide
 20-050612	Conical grinder	Blue Blanks. Composite	6 mm	0.6 mm	50 mm	12 mm	Galvanic coating
 20-061012	Grinding pin	Blue Blanks. Composite	6 mm	1.0 mm	50 mm	12 mm	Galvanic coating
 20-062012	Grinding pin	Blue Blanks. Composite	6 mm	2.0 mm	50 mm	12 mm	Galvanic coating

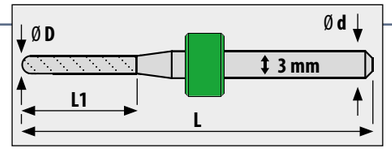
At Dental Concept Systems, we enhance the tool surface, not just the tool head when grinding. However, many CAM systems only use modified milling strategies for grinding. It pays to be in the right partnership here.

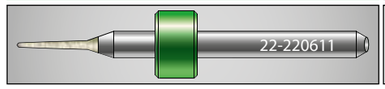
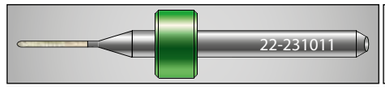
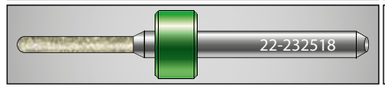
TIP FOR PROFESSIONALS

DCX™ Ø Shank: **3 mm**

GREEN LINE

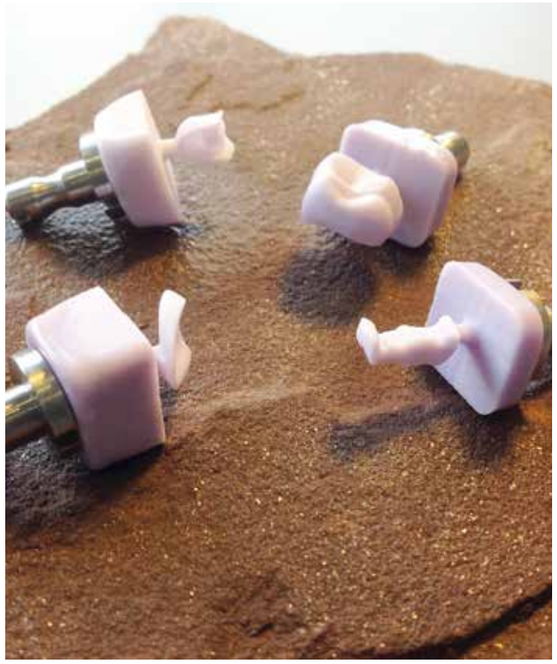
Grinding of ceramic materials



GREEN LINE	Type of tool	Milling materials	Ø Shank **d**	Cutting edge **D**	Length **L**	Clearance **L1**	Bindung Grain
 22-220611	Conical grinder	Blue Blanks. Composite	3 mm	0.6 mm	50 mm	11 mm	Fine grain electroplating on carbide
 22-231011	Grinding pin	Blue Blanks. Composite	3 mm	1.0 mm	50 mm	11 mm	Fine grain electroplating on carbide
 22-232518	Grinding pin	Blue Blanks. Composite	3 mm	2.5 mm	50 mm	18 mm	Fine grain electroplating on carbide
 Sample illustration **22-231000**	**GREEN LINE** Set of 6			Set of 6 consisting of the following articles: 2 x 22-220611, 2 x 22-231011 and 2 x 22-232518			

Thanks to the special properties of the coating on DCS GREEN LINE tools, the glass ceramic can be machined using reliable processes.

The processing can thus be carried out with low pressure, which is advantageous when clearing out cavities and prevents the glass ceramic from flaking off.



GOOD TO KNOW!

The grain size and the covering structure of the galvanic fine-grain coating are decisive for the quality of mounted points. Mounted points can look completely the same and still have completely different service lives.

CAD/CAM ACCESSORIES

MAGAZINES AND PICK-UP STATIONS

Dental Concept Systems offers various tool magazines for DC3™/DC5™/DC7™ milling systems. The tool magazines can be changed in the machines and thus offer the user a new way of organisation. Different magazines can be prepared per user or material to be able to proceed purposefully.

In many modern dental laboratories dental technicians already have their personally equipped milling tool magazines and use them on the milling systems as required.

If important components, such as blank holders, tool magazines, pick-up stations and stop rings are not used as original parts, the system manufacturer gives no warranty. Third-party manufacturers are not aware of exact manufacturing tolerances, basic settings and system changes!
This results in considerable damage to the systems!

WARNING!

Order now!

	Article	Article description
 20-901001	DCS-tool box	Case for better organization of milling tools with 6 mm shank in a protected environment. Care and storage of milling tools is particularly important for maintaining tool life and quality.

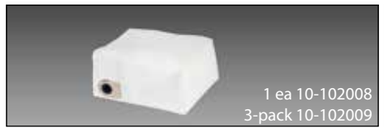
	Article	Article description
 10-101001	DC5™ Tool magazine 10-tool, positions 01 - 10	Replaceable DC5™ tool magazine for 10 tools (6 mm shank) in pick-up stations.
 10-101016	DC5™ Tool magazine 10-tool, positions 11 - 20	Replaceable DC5™ tool magazine for 10 tools (6 mm shank) in pick-up stations.
 10-101017	DC5™ Tool magazine 10-tool, positions 21 - 30	Replaceable DC5™ tool magazine for 10 tools (6 mm shank) in pick-up stations.
 10-101015	DC5™ Tool magazine 11-tool, positions 51 - 61	Replaceable DC5™ tool magazine for 11 tools (6 mm shank) in pick-up stations.
 10-101010	DC3™/ DC7™ Tool magazine 20-tool, positions 01 - 20	Replaceable DC3™/ DC7™ tool magazine for 20 tools (6 mm shank) in pick-up stations.
 10-101018	DC3™/ DC7™ Tool magazine 20-tool, positions 21 -40	Replaceable DC3™/ DC7™ tool magazine for 20 tools (6 mm shank) in pick-up stations.
 10-101019	DC3™/ DC7™ Tool magazine 20-tool, positions 41 -60	Replaceable DC3™/ DC7™ tool magazine for 20 tools (6 mm shank) in pick-up stations.
 10-201001	Pick-up station for DC1™ / DC3™ /DC5™ / DC7™	Pick-up station for the individual tool slots (6 mm shank) with spring and snap ring.
 10-201004	Pick-up station for DCX™	Pick-up station for the individual tool slots (3 mm shank) with spring and snap ring.

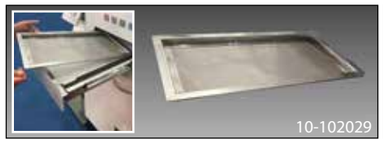
CAD/CAM ACCESSORIES

MILLING TECHNOLOGY ACCESSORIES

A system is only as good as the coordination of its single components. Particular precision can only be achieved if there is sufficient cleanliness in the working areas of the machines.

Regular maintenance of filter and cleaning systems with products from the manufacturer guarantees process reliability and prevents unnecessary equipment failures.

	Article	Article description
 10-102011	Suction basket suitable for Zubler® suction system V7000	Suction basket with connection suitable for Zubler® suction system V7000
 10-102019	Suction basket suitable for Zubler® suction system Z1 CAM	Suction basket with connection suitable for Zubler® suction system Z1 ECO / Z1 CAM
 1 ea 10-102008 3-pack 10-102009	Filter bag suitable for Zubler® suction system V7000	Filter bag (wide/white) suitable for Zubler® suction system V7000
 1 ea 10-102022 3-pack 10-102023	Filter bag suitable for Zubler® suction system Z1 CAM	Filter bag (wide/white) suitable for Zubler® suction system V7000
 4-pack 10-102030	Sound insulation for DCS milling systems	Sound insulation muffles sound and vibrations of the DCS milling systems without rigid attachment in the ground. The DCS milling machines can be placed with their machine feet on the Sound insulation.

	Article	Article description
 10-101001	DC1™ fine filter (set of 3)	The replaceable DC1™ fine filter strainer is inserted into the DC1™ collecting drawer in the top position and prevents blockages of the valves, filters or supply lines due to chips and impurities.
 10-102020	DC1™ filter mats (set of 6)	Two DC1™ Filter mats are inserted in the lowest position into the DC1™ collection drawer and prevents blockages of the valves, filters or supply lines due to chips and impurities.
 10-102029	DC1™ filter box	Filter box to prevent clogging of valves, filters or supply lines by chips. The chips can now be separated in advance through the filter box. The filter box is inserted into the coolant and lubricant containers of the DC1™ systems.
 10-102016	DC3™ / DC5™ / DC7™ filter box	Filter box to prevent clogging of valves, filters or supply lines by chips. The chips can now be separated in advance through the filter box. The filter box is inserted into the coolant and lubricant containers of the DC3™ /DC5™ and DC7™ systems.
 10-102021	Diffuser module suitable for Zubler® suction system Z1 CAM / Z1 CAM PRO	The diffuser module with connection and floor bracket can optional be installed for DC3™ /DC5™ and DC7™ systems with Zubler Z1 CAM / Z1 CAM PRO extraction system and increases the separation efficiency of fine dust.
 10-102007	DC filter cartridge, wound	Wound filter cartridge for fluid filter systems in DCS devices.
 56-200004	DCS key for filter cartridge holder	For easy replacement of the DCS filter cartridge.
 10-102024	DCS cleaning slide	Cleaning slide for the removal of solid impurities and milling chips in the drain channels of the DC3™ /DC5™ and DC7 systems under the collection drawer. Easy and fast handling.
 Grease gun: 10-102005 Grease cartridge: 10-102006	DCS Grease gun	rease gun for lubricating DCS milling systems. Direct connection suitable for all lubrication positions / grease nipples on DCS devices.

CAD/CAM ACCESSORIES

FLUIDS AND ACCESSORIES

Metal Coolant 014

Metal Coolant 014 cooling lubricant is specifically manufactured for the machining of difficult-to-machine metals such as CoCr steels, titanium and titanium alloys. Metal Coolant 014 enables a high material removal rate and delivers impressive results, even when machining ultra-fine surfaces. Titanium and titanium alloys exhibit the desired surface shine after milling, and never appear dull or cloudy. Apart from good biocompatibility, Metal Coolant 014 keeps the milling machine clean thanks to its low-foam properties and enables a clear view of the objects being machined. Metal Coolant 014 was specially developed for the cooling and filter systems in DCS milling machines and precisely adapted to suit the DC milling tools.

Ceramic Coolant 016

Ceramic Coolant 016 has been specially manufactured for use in DCS cooling and filter systems, and for the grinding of commercially available glass ceramics, composites and hybrid ceramics.

Ceramic Coolant 016 was engineered to attain the highest standards of biocompatibility, machine cleanliness and economy. Long tool service life for employed mounted points and the gentlest possible machining of ceramic blocks enable pinpoint results even in small cavities. Ceramic Coolant 016 delivers impressive surface finishes and stable grinding results for all the ceramic materials mentioned.

Universal Coolant 018

Universal Coolant 018 is a state-of-the-art coolant and abrasive product for milling machines with only one cooling and filtration system, such as the DC1 ™ and DC3 ™ system from the DCS family of devices. It offers universal properties for machining metals and grinding high performance ceramics.

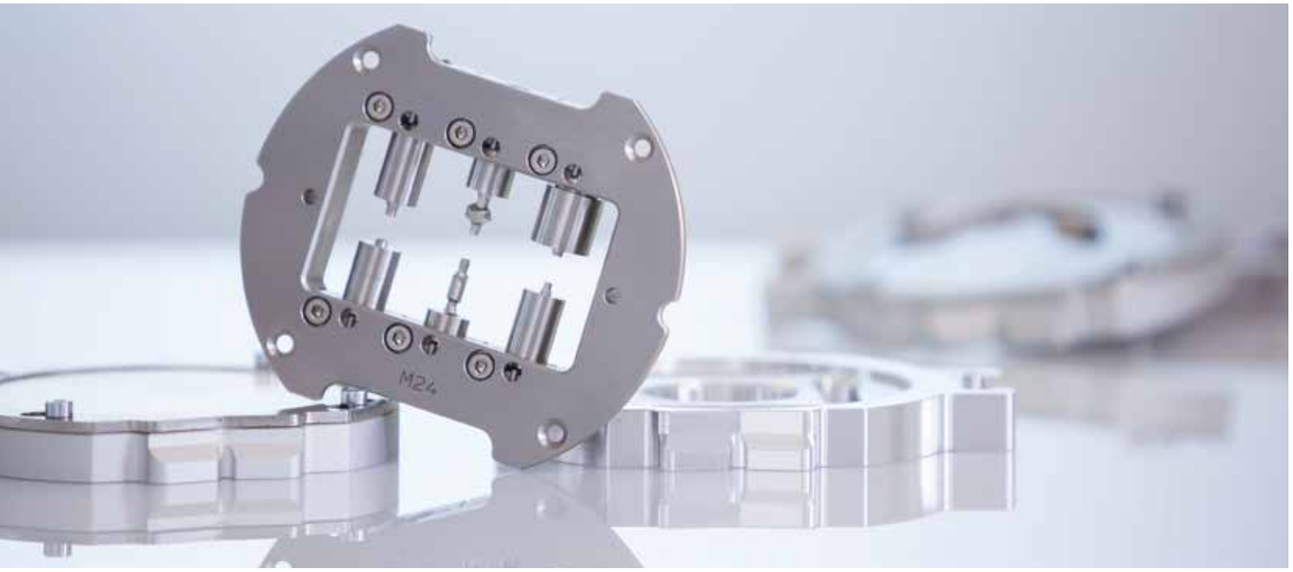
Metal Coolant 014. **Ceramic Coolant 016** and **Universal Coolant 018** are available in pre-mixed ready-to-use containers or as concentrates that can be mixed with distilled water. The containers are simple to stack and re-usable. All coolant containers are matched to the volumes of the DCS cooling and filter systems.

	Article	Article description
 10-102002	Ceramic Coolant 016 - 12 litre canister	Abrasive for machining ceramics. Ready mixed in 12 litre canister.
 10-102001	Ceramic Coolant 016 - 1 litre concentrate	Abrasive for machining ceramics. Concentrate in 1 litre container.
 10-102004	Metal Coolant 014 - 12 litre canister	Coolant for machining titanium and titanium alloys. Ready mixed in 12 litre canister.
 10-102003	Metal Coolant 014 - 1 litre concentrate	Coolant for machining titanium and titanium alloys. Concentrate in 1 litre container.
 10-102031	Universal Coolant 018 - 1 litre concentrate	Coolant and lubricant Mixture for milling metals as well as for grinding high-performance ceramics. Ready mixed in 12 liter canister.
 10-102032	Universal Coolant 018 - 1 Liter Konzentrat	Coolant and lubricant Mixture for milling metals as well as for grinding high-performance ceramics. Concentrate in 1 litre container.
 10-102026	Refractometer	The refractometer is a measuring device for determining the exact concentration of DCS coolants and lubricants. After evaporation, the exact proportion can be determined when refilling DCS concentrates.
 10-102025	Cleaning puller with rubber lip	Cleaning puller for the removal of liquid soiling in the machine interior. Simple and fast handling.

The special filter systems in DCS milling machines ensure a particularly long service life for lubricants and abrasives in continuous operation.
In case of evaporation you can simply top up with distilled water.
That's an enormous saving!
A clear advantage for customers with a DCS-system!

ADVANTAGE!

CAD/CAM ACCESSORIES



MILLING MACHINE ACCESSORIES

Components for inserting and measuring workpieces and tools must be checked regularly and replaced if worn. Accessories for DCS milling systems are subject to strict quality control by Dental Concept Systems and, like all components of the milling machines, are manufactured with the utmost with the utmost precision and care.

	Article	Article description
 10-101007	DCS/Medentika PreFace® abutment holder M23	PreFace® abutment holder for DCS devices **without automation/changer** including accessories.
 10-101008	DCS/Medentika PreFace® abutment holder M24 for DCS devices with work piece automation	PreFace® abutment holder for DCS devices **with automation/changer** including accessories.

	Article	Article description
 10-101005	DCS Blue 44 workpiece holder for systems without automation	Workpiece holder for individual blank form Blue 44.
 10-101002	DCS Blue 44 workpiece holder for systems with automation	Workpiece holder for individual blank form Blue 44.
 10-101004	DCS workpiece holder for systems with automation	Workpiece holder for blanks in automation.
 10-101022	DCS workpiece holder for systems with automation	Workpiece holder for DCS Blue 44 and DCS/Medentika PreFace® abutment holder M24.
 (with automation) 10-101051 (without automation) 10-101050	DCS BASIC MEASURE BLANK with or without automation holder	Measuring blank for basic measurement in the DCS systems.
 10-101052	DCS HIGH PRECISION MEASURE BLANK without automation holder	High-precision measuring blank for 3D measurement in the DCS systems.
 10-101023	Spacer rings (set of 2) for inserting 8 mm blanks	Set of 2 spacer rings for inserting into the blank holder for machines with and without automation to be able to process 8 mm thick blanks. Spacer rings are inserted into the holder under and above the blank and have a thickness of 1 mm each.
 10-200012	DCS measuring pin manually	DCS measuring pin with 6 mm shank for pick-up holder with electrical supply for manual insertion into the high-frequency spindle.
 10-200021	DCS measuring pin Automation	DCS Measuring pin with 6 mm shank for pick-up holder with fl exible electrical supply cable for DC7™ systems.
 10-102027	Digital precision caliper gauge	Digital precision caliper gauge for testing and checking workpieces and test specimens.

CAD/CAM ACCESSORIES

SCAN AND SUCTION PRODUCTS

To achieve optimal conditions when scanning documents for dental CAD/CAM applications, the right tools and a clean dust-free environment are important. The right particles, the scan sprays or powders, in optimal distribution and grain size determine the result.

Avoiding reflections on smooth metal surfaces is a prerequisite for the fabrication of high-quality implant-supported superstructures and bar restorations.
It is particularly important to avoid soiling of optical camera systems in the scanning devices. For this special suction devices are offered.

	Article	Article description
 11-101010	DCS Scanspray 010	Scanspray for smooth metal and plastic surfaces. Fine powder spray to improve the optical properties of objects when scanning for CAD/CAM applications. Especially suitable for implant-supported bar and superstructures.
 11-101012	DCS Scanspray 012	Scanspray to improve the optical properties of gypsum models when they are scanned by laser or strip light scanner in dental CAD/CAM applications. High fluid content allows penetration of the scan powder into gypsum and cellulose surfaces. With low application and optimum optical properties.
 (10 g) 11-101023 (20 g) 11-101021 (1 g sample) 11-101022	Silver Scan contrast powder	Contrast powder for improving the optical properties of metal surfaces when scanned with a laser or strip light scanner. For application and spreading with a brush. For processing with all common fixing agents.
 19-010002	R1700 Spraybox	The R1700 Spraybox was designed for the extraction of particles when spraying models with scanning spray before scanning. The spraybox must not be used in the vicinity and on the same table level as optical scanning devices and requires a separate workstation.
 19-010003 Wall bracket: 19-010004	R1500 Exhaust Hood	For extracting scan spray mist. The R1500 exhaust hood with flexible support arm can be easily positioned on the table and can be installed behind scanning devices in a higher level. (also available with wall bracket).

NEW! Ideal for all Eagle Eye® scanners!

 11-101011	WHITE RABBIT Telescope matting spray for 3D-imaging	For matting shiny surfaces for high-resolution scan images. Developed for the digital production of precise telescope and bar restorations in the DCS workflow. For trained users. For extraoral use only. Particularly suitable for small and fine dental restorations with high demands. Coordinated with all Eagle Eye® scanners.

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