FULL METAL BLANKS
for high aesthetics and precision
Efficiency and complexity are the secret of a productive production chain. In order for system users to benefit from this promising symbiosis, a team of programmers, engineers, machinists and dental technicians work around the clock on new ideas and methods for the entire range of materials used by Dental Concept Systems.

All materials are specially designed for the respective system components and manufactured to the specifications of specialists. At the same time, during the development and programming of new possibilities in the control and CAM software, the matching tools and materials are developed and manufactured. Dental Concept Systems always gives users the necessary process reliability for all system components. The goal is the undisturbed production process in the dental laboratory.
A system is only as good as its adaptability to the ever changing needs of the market. In the development of modern materials for milling systems diligence and care are necessary. Much more important, however, is decades of experience as a manufacturer and direct system provider in terms of the patient.

Dental Concept Systems has been offering systems for dental technicians from all over the world since 2011. The system user can find actual proof of the necessary experience in production and application of dental materials on the part of the bredent Group. With 45 years of experience and competence in dental technology and dentistry, the group has developed into a full-service provider in the dental market. Since 1974, the constant pursuit of optimization of comprehensive system solutions and therapy concepts has determined developments at bredent.

The broad range for DCS systems offers users a safe variety and depends on the applications required by the market. After an initially manageable range of materials, an ever-increasing bandwidth has now been created. Modern dental technicians demand a simple operability with the efficiency of industrial standards. As a systems supplier, Dental Concept Systems can certainly take on this task and benefit from the bredent Group's long experience. Since all components come from a single source, it is possible to provide the necessary creativity for user-friendly operation in combination with a continuous adaptation to specific market conditions.

EXPERTISE FROM EXPERIENCE SINCE 1974

OPINIONS OF OUR SYSTEM CUSTOMERS:

The opinion of experienced system users shows how important the use of coordinated system components is and emphasizes the importance of CAD / CAM material developments from Dental Concept Systems, based on the strong competence of the bredent group.

From the suction detection of the ground tooth to the milling of the workplace, since the beginning of 2015 one of the most modern CAD / CAM systems for all work steps is in use: the DC5 from Dental Concept Systems. Especially the speed and precision convinced us. No wonder, therefore, that we now have a second DCS system in use. Due to the clean workspaces and sophisticated extraction techniques, quick changes for all materials are possible. Our company is well-known for CAD / CAM milled Telescope technology in CoCr, fully anatomical composite reconstructions.

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All our milling systems must be strong and fast enough. Over the last 10 years, we have made more than 2,000 circular restorations in the “All on 4” implant technology and have accompanied these treatments from patient planning to surgery. With our DCS systems we produce circular, fully anatomical zirconia restorations which are directly screwed onto the implant and as well as circular titanium ridges and bridges with likewise fully anatomical composite full veneer. After milling these works for years with our 2 DCS systems, we are now also thrilled with the results of our new DC1™. We now have another fully-fledged desktop unit for all our demanding CAD / CAM applications.

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CAD / CAM manufactured telescopes are a special specialty from my dental laboratory. Therefore, I need a high degree of repeatability and a permanently safe production in order to always be able to meet the demands of my customers. My DC1™ system is fully integrated into the CoCr production and works in harmony with my large DC7™ milling system. Despite its compact design, the DC1™ convinced me daily by consistently high quality results. The collaboration with the team of Dental Concept Systems is very close and I am looking forward to the implementation of many fresh ideas in the future as a user.

MDT Nico Malik, Dental Labor Schatz in Bad Rappenau, Germany

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Jutta und Uli von Haussen, Implant-Tech Support in Miami, USA

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With **DC NP EXPERT** a high-quality CoCr alloy (type 4) is available for all applications of VMK technology. In addition, the CoCr alloy provides excellent corrosion and temperature resistance. **DC NP EXPERT** is nickel- and beryllium-free and thus biocompatible. The material allows a very good machinability with low tool wear.

**Indications:**
- Crowns, partial crowns and bridges
- One piece abutments
- Implant retained suprastructures
- Bridges and telescopic crowns
- Model casting with attachment
- Optimized for laser welding

**Chemical composition:**

<table>
<thead>
<tr>
<th></th>
<th>Co</th>
<th>Cr</th>
<th>Mo</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass%</td>
<td>66%</td>
<td>27%</td>
<td>6%</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

**Typical technical data:**

- **Melting interval:** 1307-1417°C
- **CTE (25-500°C):** 14.3×10⁻⁶ K⁻¹
- **Density:** 8.4g/cm³
- **Melting temperature:** 1467°C
- **Vickers hardness:** 229-245HV10
- **Elongation:** 11%
- **Yield strength (Rp 0.2):** 295MPa
- **Tensile strength:** 572MPa
- **E-module:** 235GPa
- **Type (DIN EN ISO 22674):** 4

**Sizes:**

- 70-030008: 98.4 mm x 98.4 mm
- 70-030010: 10 mm x 98.4 mm
- 70-030012: 12 mm x 98.4 mm (with step)
- 70-030013: 13.5 mm x 98.4 mm (with step)
- 70-030015: 15 mm x 98.4 mm (with step)
- 70-030016: 16 mm x 98.4 mm (with step)
- 70-030018: 18 mm x 98.4 mm (with step)
- 70-030020: 20 mm x 98.4 mm (with step)
- 70-030022: 22 mm x 98.4 mm (with step)
- 70-030025: 25 mm x 98.4 mm (with step)

When purchasing CoCr blanks, serious mistakes can be made. Non-mouldable inhomogeneous blank inclusions can quickly damage a whole milling set or overheat milled areas. The consequential damages will overshadow any savings when shopping.
DC NP EXPERT C+B 270

CoCr alloy with advanced milling characteristics

DC NP EXPERT C+B 270 is a further development of conventional milling alloys from CoCr. It meets state-of-the-art requirements and is equally suitable for the fabrication of implant-supported superstructures as well as for high-quality telescope or bar restorations. The special advantage of this new generation of CoCr milling blanks lies in the soft and gentle machining for system and tool. The experienced user registers a low-resonance milling noise. The special machining properties ensure low heat generation through a low coefficient of friction for precisely matched DCs tools and contour-rich objects.

Advantages:
• Soft millable with safe mechanical properties
• Excellent metal-ceramic composite
• Biocompatible
• Excellent polishability and easy processing
• Laser weldable, dry and wet millable

Chemical composition:

<table>
<thead>
<tr>
<th>Element</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co</td>
<td>65%</td>
</tr>
<tr>
<td>Cr</td>
<td>28.5%</td>
</tr>
<tr>
<td>Mo</td>
<td>5.5%</td>
</tr>
<tr>
<td>Others</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

Typical technical data:

- Melting interval: 1370 - 1435°C
- CTE (25-500°C): 14.5 x 10^-6 K^-1
- Density: 8.3 g/cm³
- Vickers hardness: 288 HV10
- Elongation: 12%
- Yield strength (Rp 0.2): 413 MPa
- Tensile strength: 597 MPa
- E-module: 206 GPa
- Melting temperature: 1485°C
- E-module: 206 GPa
- Yield strength (Rm 0.2): 413 MPa
- Tensile strength: 597 MPa
- E-module: 206 GPa
- Type (DIN EN ISO 22674): 4

Sizes:

- 08 mm x 98.4 mm
- 10 mm x 98.4 mm
- 12 mm x 98.4 mm
- 13.5 mm x 98.4 mm
- 15 mm x 98.4 mm
- 16 mm x 98.4 mm
- 18 mm x 98.4 mm
- 20 mm x 98.4 mm
- 25 mm x 98.4 mm
- 30 mm x 98.4 mm

Milling softly and smoothly in order to be able to enjoy the tool's long tool life, users who have a manufacturer with an overview at their side can work with them. The higher the competence of the system provider, the more secure the success of the user!
DC TITAN GRADE 4 is a titanium milling blank made of high-grade titanium alloy (grade 4) for the CAD / CAM technique. This industrially manufactured material is particularly suitable for the crown and bridge technique in the front and side tooth area, as well as for abutments and construction elements.

DC TITAN GRADE 4 is easy to mill due to its chip removal behavior. Commercially available firing ceramics suitable for titanium can be used.

### Advantages:
- Perfect milling results
- Excellent adhesive bond with titanium ceramics
- Biocompatible
- Extremely corrosion resistant
- Particularly patient-friendly due to low thermal conductivity

### Chemical composition:

<table>
<thead>
<tr>
<th>Element</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ti</td>
<td>&gt;99%</td>
</tr>
<tr>
<td>Others</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

### Typical technical data:

- **Melting interval:** 1645-1660°C
- **CTE (25-500°C):** 9.7 x 10^-6 K^-1
- **Density:** 4.5 g/cm³
- **Melting temperature:** 1660°C
- **Vickers hardness:** >200 HV/30
- **Elongation:** 23.5%
- **Yield strength (Ry 0.2):** 504 MPa
- **Tensile strength:** 599 MPa
- **E-modulus:** 110 GPa

### Sizes:

- 70-044008: 8 mm x 98.4 mm
- 70-044010: 10 mm x 98.4 mm
- 70-044012: 12 mm x 98.4 mm (with step)
- 70-044013: 13.5 mm x 98.4 mm (with step)
- 70-044015: 15 mm x 98.4 mm (with step)
- 70-044016: 16 mm x 98.4 mm (with step)
- 70-044018: 16 mm x 98.4 mm (with step)
- 70-044020: 20 mm x 98.4 mm (with step)
- 70-044025: 25 mm x 98.4 mm (with step)
- 70-044030: 30 mm x 98.4 mm (with step)

Milling tools used for titanium must not be used for CoCr afterwards. Due to the properties of pure titanium and titanium alloy, the dimension of the tool cutting edge changes. It therefore applies: Once titanium cutter - always titanium cutter!
DC TITAN GRADE 5

Titanium alloy for extensive restorations

DC TITAN GRADE 5 is a titanium milling blank made of high-grade titanium alloy (grade 5 ELi) for the CAD / CAM technique. This industrially manufactured material is particularly suitable for the crown and bridge technique in the front and side teeth area as well as for abutments, bars and implant-supported superstructures. DC TITAN GRADE 5 has high fracture and hardness values in the titanium alloy range. Commercially available firing ceramics suitable for titanium can be used.

Vorteile:

• Ideal mechanical properties & excellent bond with titanium ceramics
• Biocompatible & extremely corrosion resistant - ELi (extra low Interstitial) N,C,H, Fe,O <0.4 %
• Especially patient-friendly due to low thermal conductivity
• Excellent u.a. suitable for the production of implant-supported dentures, superstructures, bars and abutments

Chemical composition:

<table>
<thead>
<tr>
<th>Element</th>
<th>Ti</th>
<th>Al</th>
<th>V</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>89.4</td>
<td>6.2</td>
<td>4</td>
<td>&lt;0.4</td>
</tr>
</tbody>
</table>

Typical technical data:

- Melting interval: 1640-1650 °C
- Density: 4.4 g/cm³
- CTE (25-500°C): 10.3 x 10^-6 K^-1
- Melting temperature: 1650 °C
- Vickers hardness: 310HV/30
- Elongation: 15%
- Tensile strength (Rp 0.2): 870 MPa
- Tensile strength: 921 MPa
- E-modulus: 110 GPa
- Type (DIN EN ISO 22674): 4

Sizes:

- 70-045008: Ø 8 mm x 98.4 mm
- 70-045010: Ø 10 mm x 98.4 mm
- 70-045012: Ø 12 mm x 98.4 mm (with step)
- 70-045013: Ø 13.5 mm x 98.4 mm (with step)
- 70-045015: Ø 15 mm x 98.4 mm (with step)
- 70-045016: Ø 16 mm x 98.4 mm (with step)
- 70-045018: Ø 18 mm x 98.4 mm (with step)
- 70-045020: Ø 20 mm x 98.4 mm (with step)
- 70-045025: Ø 25 mm x 98.4 mm (with step)
- 70-045030: Ø 30 mm x 98.4 mm (with step)

Titan is not the same as titanium! What implant components actually do and what material properties are necessary for implant-supported restorations and abutments can only be judged by a system provider, who himself is also an implant manufacturer.

Melting interval: 1640-1650 °C

CTE (25-500°C): 10.3 x 10^-6 K^-1

Density: 4.4 g/cm³

Vickers hardness: 310HV/30

E-modulus: 110 GPa

Type (DIN EN ISO 22674): 4

Melting temperature: 1650 °C

DC TITAN GRADE 5

DC TITAN GRADE 5
DC ALU
Industrial aluminum alloy

DC ALU are milling blanks made of an easily and defined millable aluminum alloy for milling various test specimens for the measurement and validation of DCS milling systems. Also suitable for the production of dentate models, prototyping and model making. DC ALU is not a medical device.

Advantages:

• Defined properties for the production of precise measuring and test bodies
• Excellent milling properties for fast processing
• Industrial standard for standardized test methods
• Adjustment taken into account for DCS measurement methodology and DC control software
• Suitable for international validation processes

Chemical composition:

<table>
<thead>
<tr>
<th>Element</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Si</td>
<td>---</td>
<td>0.80 %</td>
</tr>
<tr>
<td>Fe</td>
<td>---</td>
<td>0.80 %</td>
</tr>
<tr>
<td>Cu</td>
<td>3.3 %</td>
<td>4.4 %</td>
</tr>
<tr>
<td>Mn</td>
<td>0.50 %</td>
<td>1.0 %</td>
</tr>
<tr>
<td>Mg</td>
<td>0.40 %</td>
<td>1.8 %</td>
</tr>
<tr>
<td>Cr</td>
<td>---</td>
<td>0.10 %</td>
</tr>
<tr>
<td>Ni</td>
<td>---</td>
<td>0.20 %</td>
</tr>
<tr>
<td>Zn</td>
<td>---</td>
<td>0.40 %</td>
</tr>
<tr>
<td>Ti</td>
<td>---</td>
<td>0.10 %</td>
</tr>
<tr>
<td>Pb</td>
<td>---</td>
<td>1.50 %</td>
</tr>
</tbody>
</table>

Physical Properties (Room temperature)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density (g/cm³)</td>
<td>2.85</td>
</tr>
<tr>
<td>E-modulus (MPa)</td>
<td>71,000</td>
</tr>
<tr>
<td>Electric conductivity (Ω x mm²/m)</td>
<td>0.057</td>
</tr>
<tr>
<td>CTE (K⁻¹ x 10⁻⁶)</td>
<td>23.5</td>
</tr>
<tr>
<td>Thermal conductivity (W/m x K)</td>
<td>140</td>
</tr>
</tbody>
</table>

Mechanical Properties (Condition: Pressed T4)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>RD</th>
<th>VK</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 80</td>
<td>&lt; 80</td>
<td>&lt; 80</td>
</tr>
<tr>
<td>80 &lt; 200</td>
<td>370</td>
<td>250</td>
</tr>
<tr>
<td>200 &lt; 250</td>
<td>340</td>
<td>220</td>
</tr>
<tr>
<td>&gt; 250</td>
<td>330</td>
<td>210</td>
</tr>
</tbody>
</table>

Who provides test specimens for his systems has nothing to hide. The DCS team likes to talk about the high precision of its systems and therefore creates opportunities for users to convince themselves.
ORDER JUST NOW OUR CAD/CAM TOOLS PRODUCT OVERVIEW & CAD/CAM TRAINING PROGRAM