THE **ZENO®** TEC SYSTEM

WIELAND
Dental Division

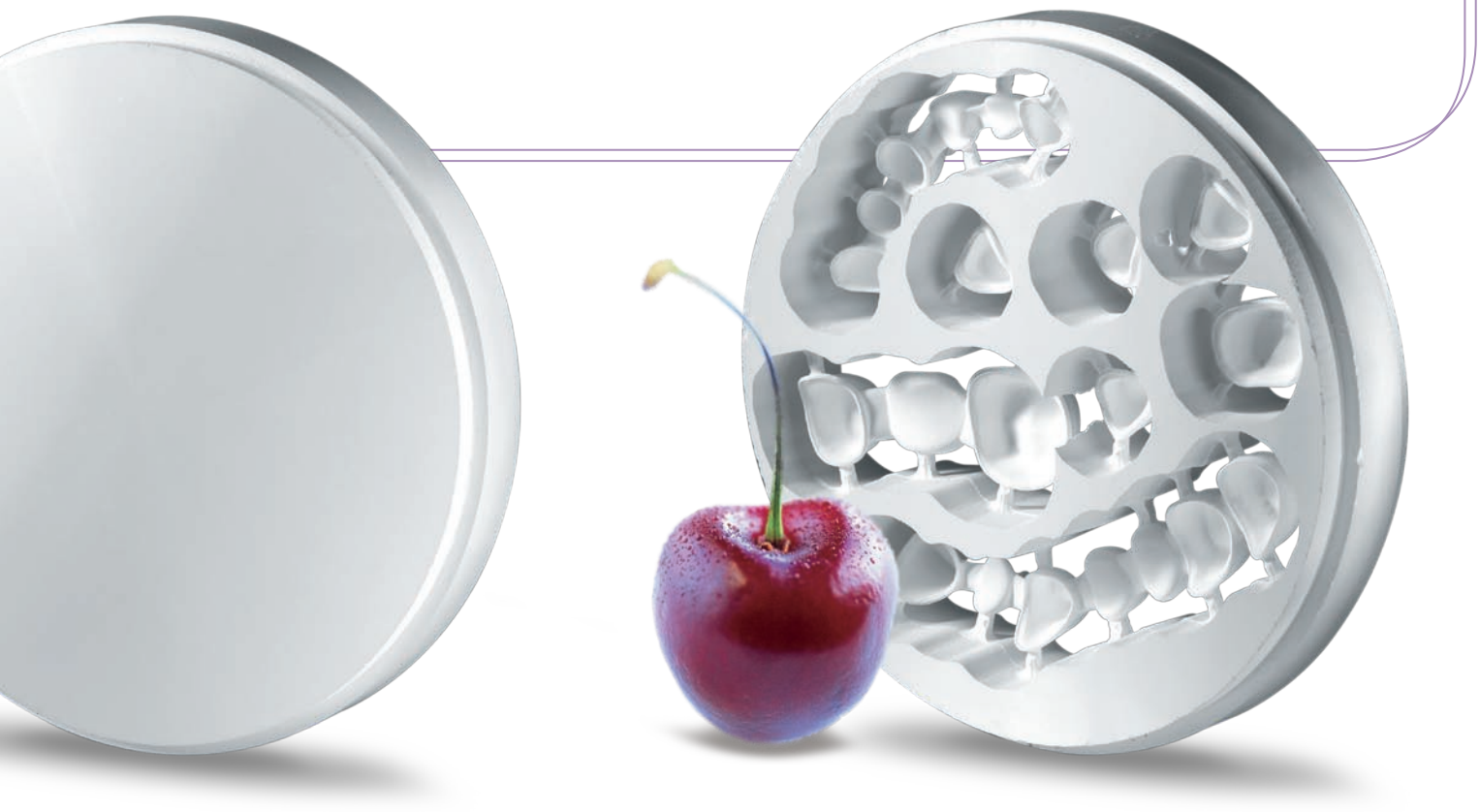
Z

CONTENT

ZENO® Tec System

DENTAL DIVERSITY BY WIELAND

With the **ZENO®** Tec system WIELAND Dental + Technik not only offers a complete CAD/CAM system but also technical support and dental know-how. This system was launched at IDS 2005 and has since been developed further to reach new technical heights. You will find significant new developments in the milling machines, blanks and in the software specially tailored to the individual machines. WIELAND's aim is to increase productivity in the dental laboratory.



THE ADVANTAGES OF THE **ZENO®** TEC SYSTEM AT A GLANCE

FLEXIBILITY

Should you mill it yourself or have it milled? You don't have to answer this question right away. The **ZENO®** Tec system can easily be complemented by adding further components.

A WIDE CHOICE OF MATERIALS

The choice of materials ranges from non-precious metals and titanium to acrylic and zirconium oxide. You can become a full-service supplier.

A WIDE SPECTRUM OF INDICATIONS

The range of indications stretches from crowns and largespan bridgework to telescopic and bar substructures as well as reduced full crowns and customised implant abutments. And there's more to follow!

EASY TO USE

There's no need to be afraid of new technology. Our dental technicians have made sure that you can quickly find your way around the system and still have scope for creativity.

PRECISION

Materials, machines and processes are specially designed to match each other, so that a perfect fit can be achieved even with larger restorations.

QUALITY

For our milling machines we use components which have a proven track record in industry. This is your guarantee of reliability and efficiency.

PRODUCTIVITY

Have you ever dreamt of making money while you sleep? The **ZENO®** Tec system carries out milling automatically – even overnight.

ZENO® MANAGER

The **ZENO®** Manager is the command centre of the **ZENO®** Tec system. This is where all the information from the individual processing stations comes together. This enables you to constantly monitor your orders and the manufacturing process.

PRODUCT FEATURES

- Easy and flexible entry of orders
- Centralisation of all production data
- Easy 3D visualisation for monitoring the order data
- Easy to find and sort orders by delivery date, laboratory name and other search criteria
- Easy order tracking
- Optimum coordination of all **ZENO®** components
- Optimum production process on the basis of the order data and model dimensions
- Automatic data transfer to the available **ZENO®** milling machines or external partners with automatic status feedback
- Easy to expand the system by adding further components or interfaces to external partners

SCAN IT – WITH THE 3SHAPE D250 SCANNER

Together with the modelling software DentalDesigner™ the 3shape D250 scanner is your passport to the world of CAD/CAM technology.

The 3Shape D250 is a state-of-the-art 3D scanner which operates on a laser plane principle using two cameras. All points on the surface (including undercuts) are captured in full by moving the object through all three axes. The cut model to be scanned is fixed to the scan adapter with modelling clay.

You can scan anything from single dies to complete arch models. Of course, this also includes the gingiva as well as adjacent and opposing dentition. You can supplement the DentalDesigner™ pontic library by adding elements that you have scanned yourself. If you should need to scan in a reflective surface, treat it first with the WIELAND Scan Spray.

HIGHLIGHTS AT A GLANCE

- **Scanning at the touch of a button:**
  Place the object in the scanner and press the start button. The unique 3Shape scanner technology always ensures that the entire surface of the object is scanned in. To do this, the software automatically recognises if certain areas have not been scanned and the missing part is rescanned from a different angle.
- **Fast data acquisition:**
  The data acquisition for a whole crown only takes 45 – 60 seconds.
- **Automatic data processing:**
  The scanner automatically prepares the data for further processing in the DentalDesigner™ CAD program.

TECHNICAL SPECIFICATIONS

- **Scan time:**
  45–60 seconds (per die)
  5–6 min (cut model)
- **Object movement:**
  3 axes (rotation, translation, tilt)
- **Accuracy:**
  < 20 µm
- **Operating voltage:**
  110 or 220 V
- **Dimensions and weight:**
  46 x 32 x 52 cm (w x h x d), approx. 30 kg

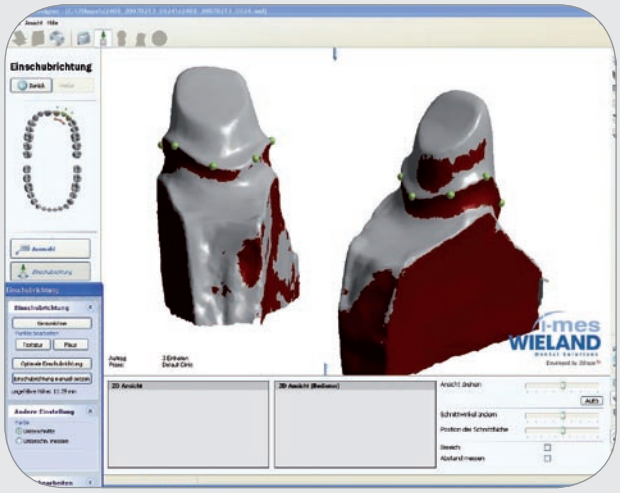
DENTALDESIGNER™

Once you have scanned in your models, dies, bite registrations or wax-ups, the actual modelling process can begin. This is done with the DentalDesigner™ modelling software.

No special computer skills are required to use the DentalDesigner™ application. The program takes you step by step through the process. There is no need to learn complicated keystroke combinations. All functions can be controlled by the mouse. The application automatically suggests designs which you can then modify to suit your needs. A wide range of additional options are available at the touch of a button, so that you can give free rein to your dental expertise and use your creativity to produce a functionally perfect and aesthetically pleasing restoration.

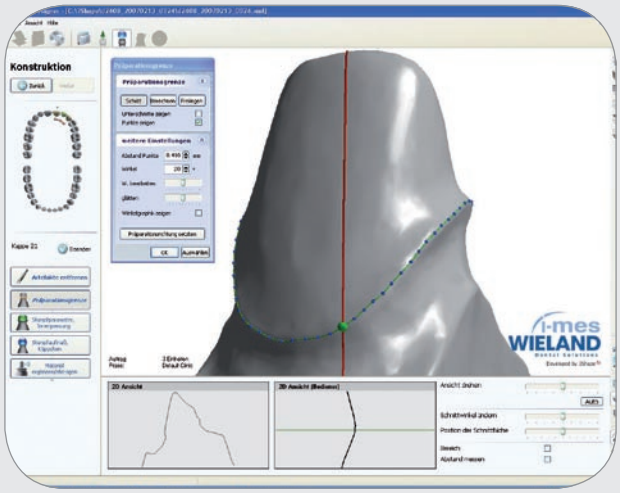
DEFINING THE INSERTION DIRECTION

For bridges and telescopic work the insertion direction is determined automatically. This gives you the security of knowing that your work can be milled and inserted.



PREPARATION MARGIN

The preparation margin is automatically recognised by the software. If need be, you can correct this either partially or all round. Undercuts are indicated and can be blocked out above the preparation margin either manually or automatically.

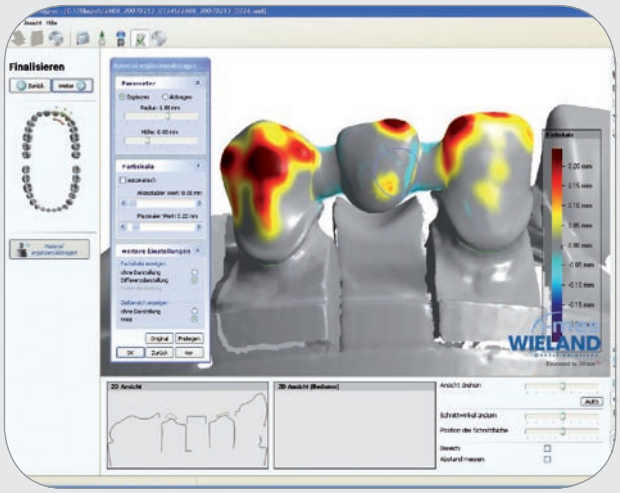


CROWNS, BRIDGES, TELESCOPIC WORK AND ABUTMENTS

For each material, the software suggests the best design features (such as the wall thickness of a coping). Pontics are automatically loaded from a library and positioned. Connectors with the correct dimensions are generated and inserted automatically and can be modified to suit the material used. If the diameter of the connector is less than the critical value, a warning is given. The DentalDesigner™ application makes modelling quick, easy and reliable.

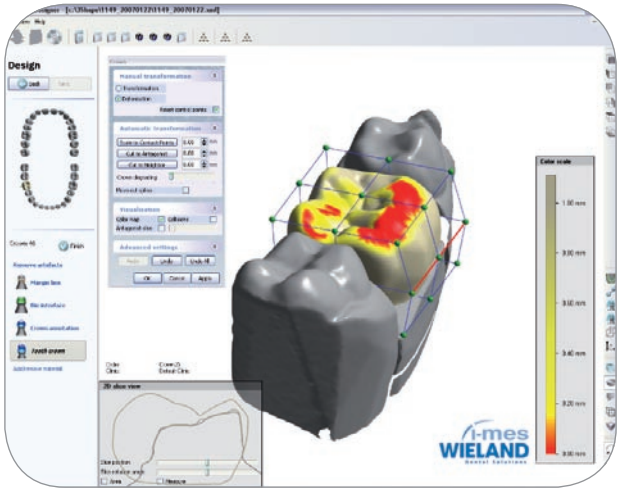
VIRTUAL WAX KNIFE

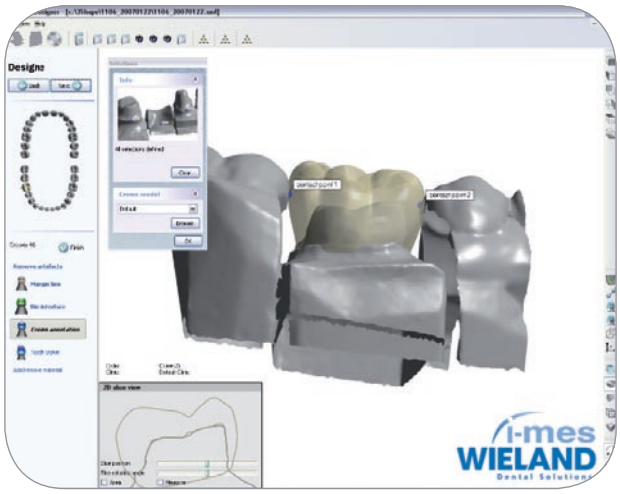
Individual creativity is the key to the design of aesthetic and functional dental restorations. The virtual wax knife enables you to model the cusps and connectors as you like. This is the only way to achieve long-lasting restorations.



CUT-BACK FUNCTION

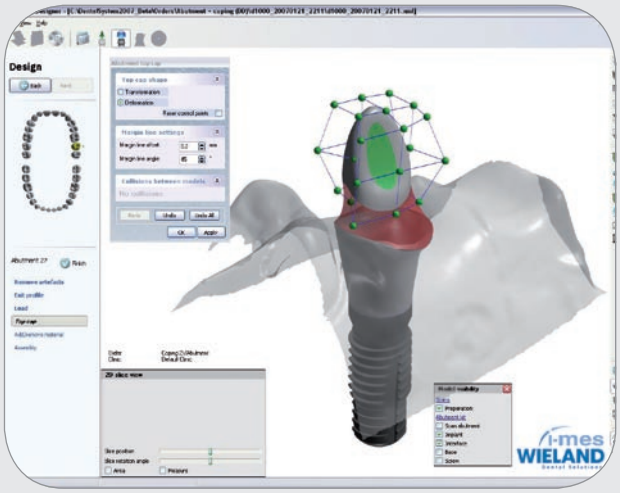
Allow for the ceramic build-up from the start and decide for yourself whether you want to veneer the restoration in the conventional way with our REFLEX® or ZIROX® ceramics or if you want to use the overpress ceramic Press X™ Zr for zirconium oxide substructures.

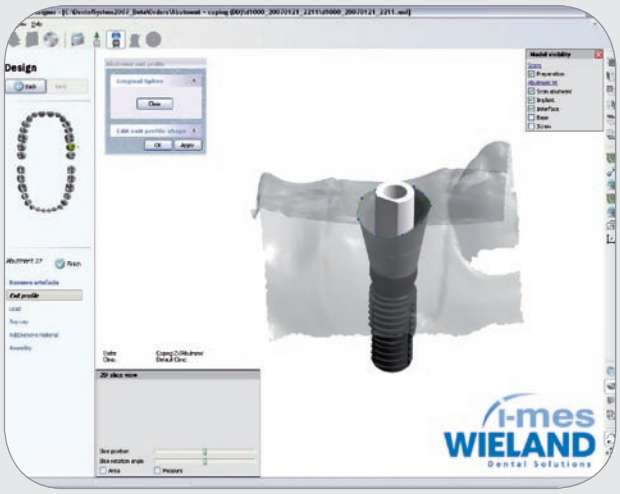




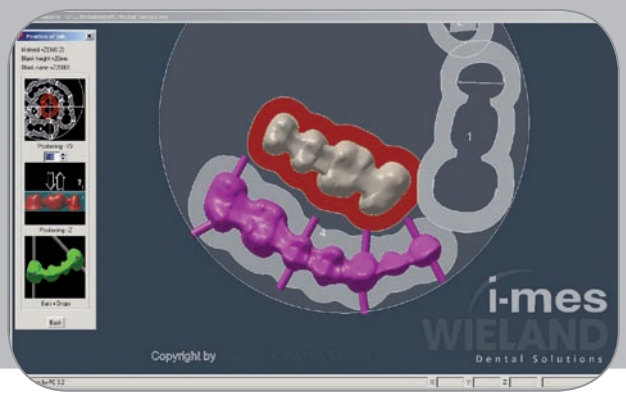
INDIVIDUAL IMPLANT ABUTMENTS

Offer your clients something that puts the rest in the shade. Individually designed implant abutments will be welcomed enthusiastically by your dentist, your patients and yourself.





ZENO® CAM



Perhaps you do not like to entrust important things to others? Then mill it yourself. To do this you do not need to be a skilled machine operator, because the CAM module relieves you of much of the work. It helps you to manage your **ZENO®** discs. It shows you which blanks still have room for more work. Here you can also decide which order the restorations you have designed should be milled in. Just a few clicks and the milling operation is under way.

ZENO® MILLING MACHINES

The decision which of the three milling machines to choose will be based on the materials to be milled. All **ZENO®** milling machines are designed for continuous use in production facilities. They are fully automatic and even run overnight. This considerably increases the productivity of a lab. What is more, you can rely on the sophisticated technology of these machines because WIELAND uses components which have a proven track record of many years.

ZENO® 4820 M1

■ ZENO® 4820 M1

The **ZENO®** 4820 M1 is a veritable all-rounder. Because this machine is extremely robust, all **ZENO®** discs can be processed in it. The two processing dishes enable you to mill two different **ZENO®** discs at the same time in a fully automatic process launched at the touch of a button. This makes the through-put equivalent to up to 60 units. This means that this machine is also suitable for use in large milling centres.

■ ZENO® 3020

Perhaps you want to retain the ability to process a wide range of materials but are not looking to attain such high production volumes? Then the **ZENO®** 3020 is the one for you. It has only one processing dish and is therefore somewhat smaller. This machine also has a fully automatic control system and produces results of the same high quality.

■ ZENO® 4030 M1

The **ZENO®** 4030 M1 is much more than an entry-level model. It the ideal production system for all those who wish to concentrate on acrylic and zirconium oxide – without sacrificing anything in terms of quality or productivity. This machine offers the benefits of modular design and can dispense with the water-cooling and heavy chassis required for processing metals.

ZENO® 4030 M1

ZENO® 3020

The following table allows you to compare the features of all three **ZENO®** milling machines.

OPERATION

	ZENO® 4820 M1	ZENO® 3020	ZENO® 4030 M1
Automatic operation, even overnight	✓	✓	✓
Automatic tool length measurement with broken tool detection	✓	✓	✓
Remote maintenance option	✓	✓	✓
Fully automatic NC control of all four axes	✓	✓	✓
Knowledge of machines required	—	—	—
Production capacity per day*	Approx. 120 units	Approx. 60 units	Approx. 120 units
Choice of materials	**ZENO®** Zr Disc **ZENO®** Pro Disc **ZENO®** PMMA Disc **ZENO®** NP Disc **ZENO®** Ti Disc	**ZENO®** Zr Disc **ZENO®** Pro Disc **ZENO®** PMMA Disc **ZENO®** NP Disc **ZENO®** Ti Disc	**ZENO®** Zr Disc **ZENO®** Pro Disc **ZENO®** PMMA Disc

* based on **ZENO®** Zr discs (zirconium oxide)

TECHNICAL SPECIFICATIONS

	ZENO® 4820 M1	ZENO® 3020	ZENO® 4030 M1
Design	Extremely robust steel and granite construction	Compact steel design	Bench-top model with steel chassis
Processing dishes	**2**, both for wet or dry processing	**1**, for wet or dry processing	**2**, for dry processing
Drive system	Maintenance-free AC servomotors	Maintenance-free AC servomotors	Maintenance-free AC servomotors
Spindle	10,000 – 60,000 rpm	10,000 – 60,000 rpm	10,000 – 100,000 rpm
Number of tool positions	20	15	8
Electrical connection	230 V/110 V, max. power consumption 2.5 kW	230 V/110 V, max. power consumption 2.0 kW	230 V/110 V, max. power consumption 1.0 kW
Compressed air connection	Min. 7 bar, approx. 100 l/min	Min. 7 bar, approx. 100 l/min	Min. 7 bar, approx. 80 l/min
Dimensions (excluding connections)	150 x 185 x 120 cm (w x h x d)	105 x 176 x 84 cm (w x h x d)	80 x 80 x 85 cm (w x h x d)
Weight	750 kg	450 kg	155 kg

ZENO® AIR

ZENO® Air ensures cleanliness in the milling lab by extracting fine dust particles. The extraction function is switched on and off automatically by the milling machine and the system includes automatic filter cleaning.

TECHNICAL SPECIFICATIONS

- Automatic filter cleaning
- Controlled by the **ZENO®** milling machine
- Large collecting bin
- Low maintenance requirement
- Dimensions and weight:
  44 x 72 x 63 cm (w x h x d), approx. 53 kg
- 230 V
- 65 db

ZENO® FIRE

The **ZENO®** Zr substructure ceramics are hard sintered in the **ZENO®** Fire. During firing the substructures shrink to their final dimensions. Only after sintering do the substructures attain their high strength and tooth-like colour. The program is launched at the touch of a button.

TECHNICAL SPECIFICATIONS

- Program optimised for **ZENO®** Zr material
- Simple operation
- Large furnace capacity
- Robust heating elements
- Interface for **ZENO®** Fire Control monitoring software
- Dimensions and weight:
  67 x 73 x 56 cm (w x h x d), approx. 85 kg
- 230 V

ZENO® BLANKS

All **ZENO®** disc blanks have a diameter of approx. 98 mm so that you have plenty of room to position either very large items or a number of smaller ones on a single disc. Depending on the material you can make 25–30 items from a single **ZENO®** disc. Most **ZENO®** discs are available in five different thicknesses and can be milled in several stages. This enables you to minimise material costs by selecting the size that best suits your needs.

■ ZENO® ZR DISC

From this high-quality zirconium oxide material you can make, for example, primary telescopes, bridgework with up to 16 elements or customised implant abutments. **ZENO®** Zr is biocompatible and particularly resistant to ageing. This material differs from conventional zirconium oxides in that it is extremely homogeneous. This is achieved by means of a special manufacturing process and results in an excellent fit, even for large span bridgework.

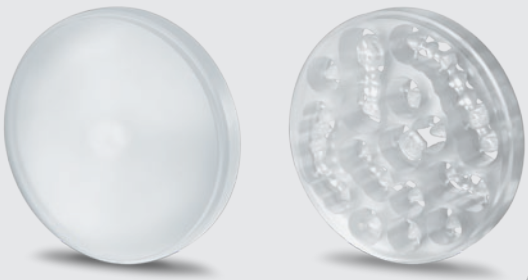
To achieve the very best aesthetic results you can also add individual colour to your substructures with Zircolor™ colouring solution. **ZENO®** Zr is also perfect for veneering with our ZIROX® veneering ceramic or overpressing with Press X™ Zr.

■ ZENO® PRO DISC

You can use this acrylic to make temporary crowns and dentures. **ZENO®** Pro discs are available in the shades A and B and can be veneered with conventional composite materials.

■ ZENO® PMMA DISC

This transparent acrylic material is very easy to mill. This makes it a quick and economical way to verify the functionality and the fit of your work on the dental model. This material will be of particular interest to users of the **ZENO®** 4030 M1 because it burns out without residue and is therefore ideal for use as a lost form material for casting. It is also suitable for pressing and overpressing.



■ ZENO® NP DISC

ZENO® NP discs give you a high-quality CrCo alloy suitable for all PFM applications. This industrially manufactured material offers you a high degree of reliability and automatically guarantees consistently high quality. **ZENO®** NP discs are of course completely nickel-free and therefore biocompatible. The best results are obtained by veneering this material with the REFLEX® ceramic.

■ ZENO® TI DISC

This titanium alloy (Ti 6Al 4V) boasts exceptional physical properties, so that you can make bridges with up to 16 elements from it. The material has proven its excellent biocompatibility, since it has been in use for years as a material for hip joint implants and for dental implant superstructures.

WIELAND Dental + Technik
GmbH & Co. KG
Schwenninger Straße 13
75179 Pforzheim, Germany

Fon +49 72 31/37 05-0
Fax +49 72 31/35 79 59

www.wieland-international.com
info@wieland-international.com

International Representations

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