



CAD/CAM Solutions

High-end Products for dental practices
and dental laboratories



REGENERATIVE



IMPLANTS



DENTAL SOLUTIONS

 ZIMMER BIOMET

MILLING



PROSTHETICS

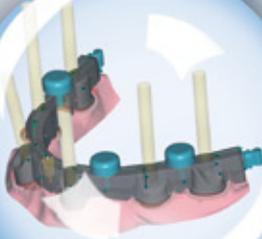
CAD/CAM manufactured restorations



SCANNER



SOFTWARE





Zfx & Zimmer Biomet

The new complete dental solution

Cooperation: Zfx and Zimmer Biomet join forces

With Zfx as its CAD/CAM partner, Zimmer Biomet is set to expand its global presence in digital dentistry by providing complete dental solutions – from oral tissue regeneration, dental implants and abutments to CAD/CAM-produced dental prostheses.

The partnership combines the global presence and the high quality standard of Zimmer Biomet with the expertise and technological know-how of Zfx to provide an extensive and evolving digital portfolio to dentists and dental laboratories!

Your benefits

- × *Open system*
- × *Milling technique for all commonly used dental materials and indications*
- × *Comprehensive and evolving portfolio*
- × *High-tech dental prostheses with "Made-In-Germany" quality*
- × *High quality standard based on authorization of all Zfx partners*
- × *Transparency of case tracking through a unique online platform for milling centres, labs and dentists*

Practical training programs

Zfx and Zimmer Biomet each offer a variety of training and practical programs. The various training and continuing education programs are specifically designed to enhance practice skills and are tailored to relate to goals and issues based on each target group. For further information on our continuing education programs please visit our websites:

www.zimmerbiomet.com
www.zfx-dental.com





Zfx

Authorized Zfx partner

Achieve your goals by innovative technologies

Zfx offers dental technicians digital technologies perfectly matched to their field of activity.

By purchasing a Zfx system component for the dental practice and participating in the associated training course, the user becomes authorized by Zfx as a Digital Lab. This allows him access to the Zfx™ Dental-Net online platform, which enables him to exchange data and to communicate with partner practices within the network and with Zfx milling centers. The partners also enable the dental technician to benefit from a fully optimized production process which is customized down to the last detail – from the digitalisation of the oral condition to the production of the virtually constructed restoration.

Division of labor by competent partners

The Zfx system has been designed so that every user is able to expand his own field of competence. Dentists become experts in determining tooth shade and taking digital impressions while dental technicians profitably use their manual expertise in digital construction. And bars, bridge frameworks and implant abutments are produced with the highest precision on 5-axis machines monitored by specialists. With this division of labour, each partner can focus on his own strengths and thus make sure that patients are supplied with high quality restorations.

Your benefits

- × Trend-setting technologies
- × Flexibility thanks to open interfaces
- × Wide range of services
- × Network of competent partners
- × Online platform for secure data exchange
- × Optimized production processes

Everything from one source

As a complete supplier of dental technologies, Zfx offers its customers everything from one source: from the in-house milling solution for creating an additional value in own company to the competent out-sourcing milling partner that provide the necessary know-how and the required precision even for the most complex cases.





OPEN SYSTEM

NO
CLICK-FEE



PORTABLE HANDPIECE



REAL-TIME STITCHING



SHORTER TREATMENT TIME



SMART-PIXEL SENSOR



2.0 USB CONNECTION

18
SCANS/SECOND



Zfx™ IntraScan

The optical impression as a precise basis for accurately-fitting restorations

Optical impressions of the highest quality can be achieved with the Zfx™ IntraScan intraoral scanner due to innovative technology.

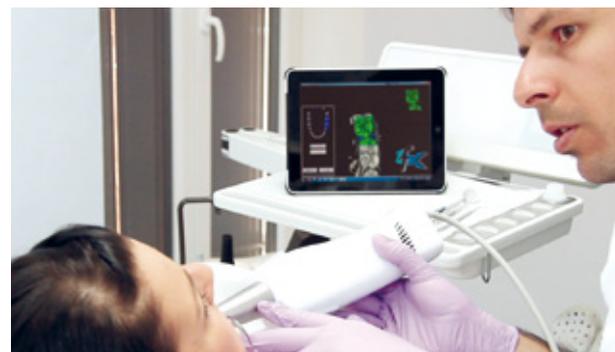
Zfx™ IntraScan is a lightweight handpiece which is connected to a notebook by means of a cable and weighs only 600 grams. The entire scanning technology is incorporated into the handpiece, removing the need for a complex workstation.

The intraoral scanner is used to digitally measure the condition of the bite and a 3D model is generated from the results. Both the hard and the soft tissue are modelled. Digital impressions taken with the Zfx™ IntraScan are used as a basis for the computer-controlled design and manufacture of implant and tooth-supported restorations. It is not necessary to apply scanning powder.



Highlights

- × *Open system (direct STL data files)*
- × *No click fees*
- × *Real-time stitching*
- × *Portable system (600g)*
- × *18 scans per second*
- × *Increased patient comfort*
- × *System package*



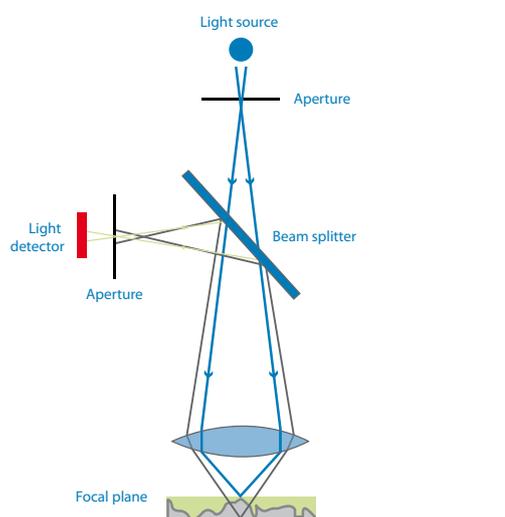
Operational aid: iPad as a remote control for the scanning process.



Zfx™ IntraScan matchholders are available in two sizes (4 and 7 mm) and are compatible with implant systems from Zimmer, Camlog, Nobel Biocare, Straumann and many more.

Zfx™ IntraScan

For smoothing the way in practical applications and in the laboratory



Highest precision: Data are gathered by the Zfx™ IntraScan using the confocal measuring principle.

3D models calculated using the Zfx™ IntraScan can be transmitted to the dental laboratory immediately thanks to the low data volume.

Workflow in practice

An optical impression of the patient's mouth is taken with the Zfx™ Intraoral scanner. The individual scans generated are combined in real time. The generated data record is small, enabling data to be transmitted quickly and easily. The result is a virtual, three-dimensional model which can be displayed and checked on the monitor. If this shows that the preparation limit has not been modelled accurately or if there are gaps in the data, then the preparation and scanning can be repeated. It is also possible to interrupt the scan, for example to re-dry a region – the scanning process is simply continued from where it was interrupted.

Data transfer

When the scanning process is complete, the generated 3D model is made available to the laboratory via the Zfx™ Dental-Net. It is not necessary for Zfx to modify or compress the data record, and the partner laboratory can start the virtual construction immediately.

Zfx™ IntraScan - Features

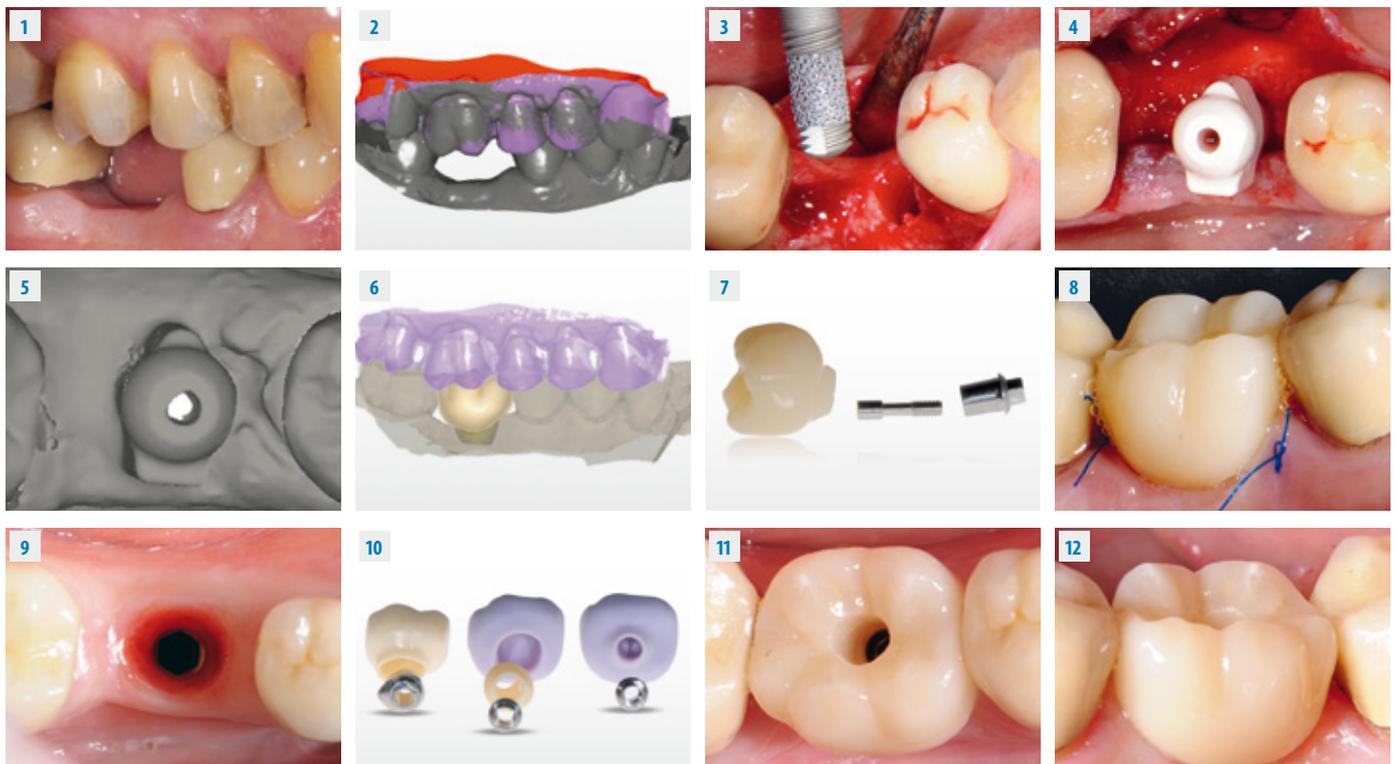
Data gathering:		Confocal measuring principle / Moiré projection
Scanning technology:		Real-time stitching of individual images
Camera sensor:		Smart Pixel Sensor
Scan time per individual scan:	[sec]	less than 0.1
Average scanning speed:		18 scans per second
Weight:	[g]	600
Number of pixels on sensor (X x Y):		144 x 90
Pixel size:	[µm]	50 x 86
Scan field (on the object - X x Y x Z):	[mm]	10.4 x 9.6 x 18
Output format:		STL



The Munich Implant Concept (MIC)

The Munich implant concept describes the delivery of a CAD/CAM-manufactured screw-retained crown in two appointments. The basis of the procedure's development is to minimize loss of hard and soft tissue that can be

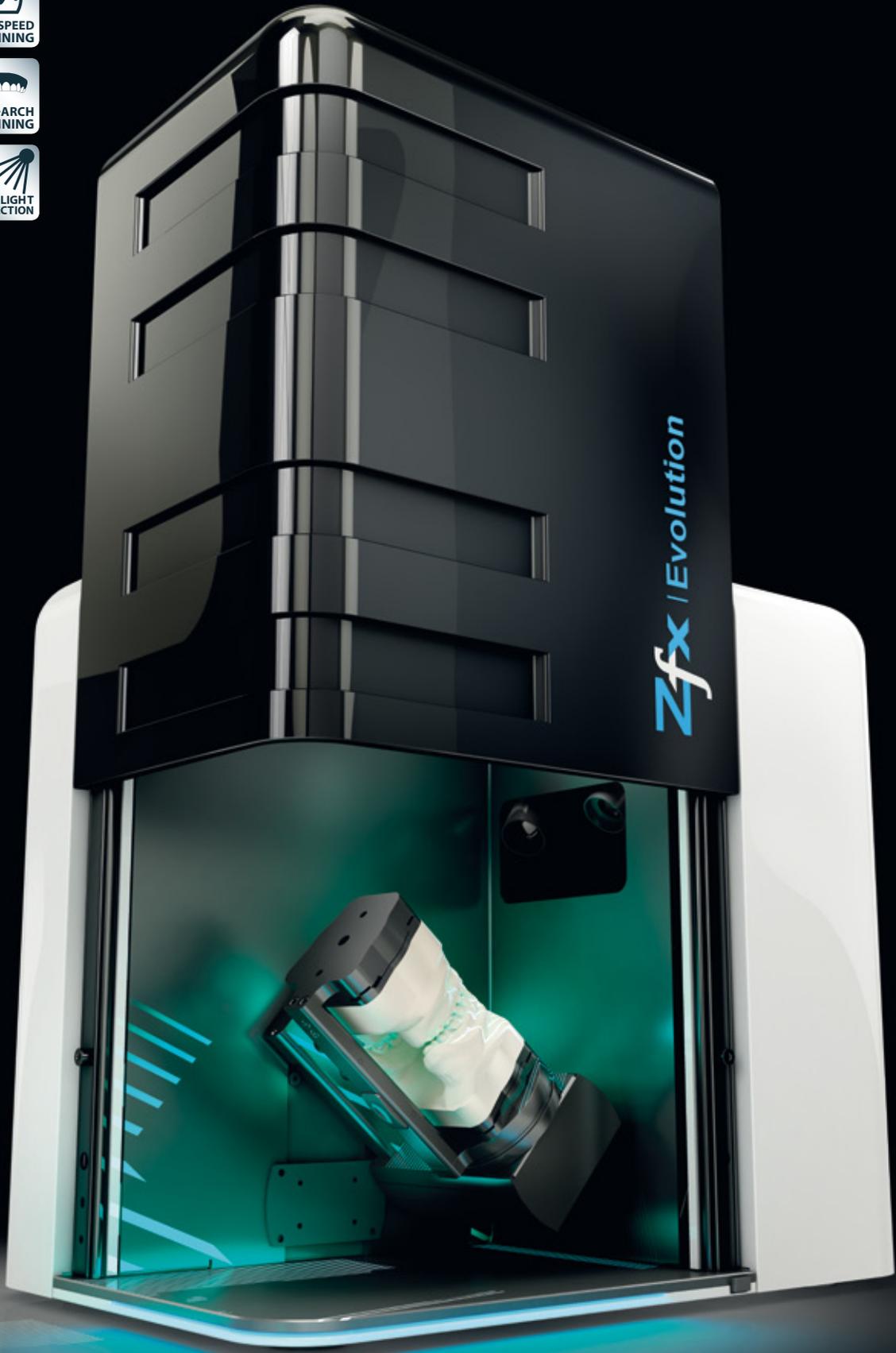
caused by repeated manipulation of the soft tissues. Furthermore it also provides an efficient workflow, practicable for daily use.



1. Pre-surgical situation: edentulous space in the 46 area **2.** Pre-op digital view after intra-oral scanning with the Zfx™ IntraScan **3.** Insertion of the Zimmer Trabecular Metal Implant **4.** Scan body (digital impression post) seated to record the implant position **5.** Digital view of the scan body recording **6.** Aggregate data sets from "Pre-op scan" and "Implant scan" with virtual design of the long-term temporary restoration **7.** Milled long-term PMMA temporary restoration before bonding with the titanium base **8.** One week after the implant exposure and the insertion of the long-term temporary restoration, prior to suture removal **9.** Emergence profile after removal of the long-term temporary (3 months), before integration of the definitive restoration **10.** Various prosthetic options for the definitive restoration **11.** Delivery of the screw-retained lithium disilicate crown (e.max CAD) **12.** One year post-op.



9 μ m
PRECISION



Zfx™ Evolution

Fast, accurate, the best of its class

The Zfx™ Evolution scanner is the entry level model of the Evolution series and has been designed to cater for the individual needs of the dental technician.

Technology from Zfx

The Zfx™ Evolution is a fully automatic stripe light scanner with open interface which has been specially developed by Zfx Innovation in Bolzano, Italy. In this development center, new ideas are born and implemented every day, and prototypes are created, tested for their suitability for practical application and brought to market maturity. The result: new and optimized system components which seamlessly fit into the existing process chain and provide the best possible support for users at every step in the manufacture of accurate dental prostheses.

A master of its class

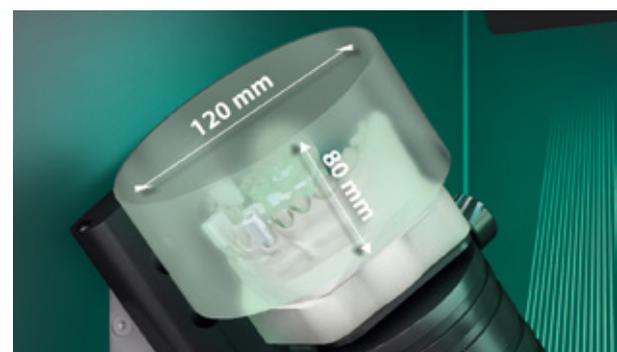
The Zfx™ Evolution can digitalise complete jaw models for constructing complex bridge frameworks with up to 14 links as well as articulated models. Furthermore, bite registrations, situation models and wax ups can be scanned, to be used as a reference when constructing frameworks.

Simple and reliable handling of the scanner is ensured by the automatic user guidance system, which leads the user through the scanning process step-by-step. Maximum productivity is guaranteed with a scan time of approx. 35 seconds for a single die and 70 seconds for a model. At the same time, the Zfx™ Evolution achieves a measuring accuracy of less than 9 µm in the solid*. The user can therefore be sure that even complex restorations will fit correctly into the patient's mouth.



Highlights

- × Open system (STL data files)
- × Measuring accuracy less than 9 µm in the solid*
- × Highest scanning speed!
- × Digitalisation of articulated models (Artex®, SAM®, Protar® and many more)
- × Surface detection thanks to photometric technology
- × Automatic detection of the implant and articulator system by means of innovative Zfx code system



Accurate surface scanning with a measuring accuracy* of less than 9 µm in the solid is possible with the Zfx™ Evolution scanner.

* Measurement according to the VDI test procedure



OPEN SYSTEM



9µm PRECISION



STL-DATA FOR 3D PRINTING



ARTICULATED MODEL SCANNING



HIGHSPEED SCANNING



2+1 CAMERA TECHNOLOGY



BARCODE SYSTEM



FULL-ARCH SCANNING



TEXTURE MAPPING



PHOTOMETRIC DETECTION



STRIP LIGHT PROJECTION

★ ★ ★
THE DENTAL
SCAN CHAMPION
2016



+

Zfx Evolution plus

Zfx™ Evolution plus⁺

The new digital plus

For those who still wants more: The “Zfx™ Evolution plus⁺”, a next-generation desktop scanner with many innovative features. The successful symbiosis of functionality, precision and aesthetics.

The innovative “open scan technology” is the basis of the new design. The scanner operates without a door, offering proficiency through the open and compact architecture. The space requirement is small and the day-to-day work-flow is simplified. Like its’ predecessor, the “Zfx™ Evolution plus⁺” utilizes the proven stripe light technology. The scanning speed (“Quick Scan”) is also improved. Due to an optimization of the image processing algorithms, the computation time of the scanner has been reduced to 30 percent.

A forward-looking feature is the “Ready for 3D-Printing” tool. The scanner generates a standard stl file that is compatible with additive manufacturing. Additionally, the validated accuracy (less than 9 µm) has been enlarged to volume of 140 x 80 mm through sensor adjustment. Thanks to the substantially enlarged field-of-view and the enhanced scanning area, fewer records per scan are necessary. This so-called “Full Scan” improves not only the speed, but also the accuracy even with large cases. Time-consuming rescans are virtually eliminated.

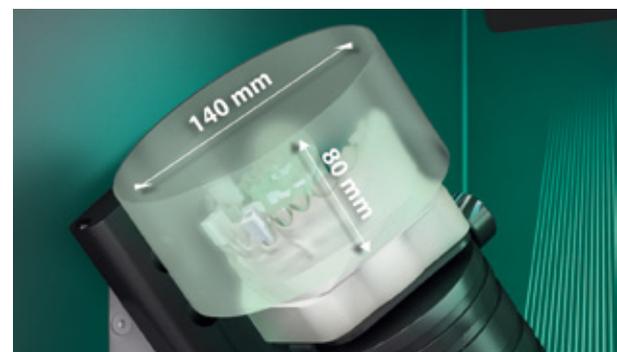
The +Upgrade

The “Color Camera” – 2+1 technology offers high resolution and realistic color reproduction. The innovative “Texture Mapping” feature allows lines to be drawn on a model that are not only displayed visually, but can also be processed through the CAD software.



Highlights

- × *Open-Scan-Technology: open and compact architecture (without a door)*
- × *Quick Scan: 30% faster scanning speed through optimization of image processing algorithms*
- × *Ready for 3D Printing: Compatible stl-data for additive manufacturing*
- × *Recording of 12 single segments (dies) at the same time*
- × *Measuring accuracy less than 9 µm in the solid!*
- × *Quick, precise scanning of large objects*
- × *Color Camera: high resolution and realistic color reproduction (2+1 technology)*
- × *Texture Mapping: Recognition of lines drawn, which are editable as cSpline (mathematical function) in the CAD Software*



As a result of an increased scan field (140 x 180 mm), less recordings per scan are necessary to maintain a process accuracy of less than 9 µm in the solid (measurement according to VDI test procedures).

* Measurement according to the VDI test procedure

The Zfx™ Evolution series

Because precision and functionality counts!



Even full-arch models for the construction of complex and large bridge frameworks – up to 14 units – can be digitized with the scanner.

The accuracy of the Zfx™ Evolution series means that the basic requirement for the design of complex restorations is achieved: The exact reproduction of the model situation.

The models are scanned by placing them on the positioning unit (Zfx™ Synchronizer) inside the scanner, either for top and bottom jaw separately or both articulated together. When the scanning process is started, a total of 128 pairs of lines are projected onto the model surface with a green LED light source. At the same time, the model is moved in various directions on the rotating and swivelling positioning unit to enable the scanner's two cameras with CCD chips to capture all the relevant surface points.

Articulator systems

Amongst others, the Zfx™ Evolution is compatible with the Artex® articulator system from Amann Girrbach, the SAM® from SAM Präzisionstechnik, the Protar® from KaVo, Stratos® from Ivoclar Vivadent and Panadent® from the company Panadent.

The Zfx™ Synchronizer enables the exact transfer of articulated models into the scanner.

- x Artex®
- x SAM®
- x Portar®
- x Stratos®
- x Panadent®





The two-piece Zfx™ Scan bodies for multiple usage without any deficit of accuracy are produced with an innovative code system, that enables the automatic recognition of the implant type and prevents application errors. Thus, in combination with the own-developed torque wrench for the Zfx™ Evolution series, an accuracy is ensured of

< 5 μm

The Zfx™ Evolution series enables a measuring accuracy (VDI test procedure) in the solid of

< 9 μm

PROCESS
ACCURACY
< 20 μm

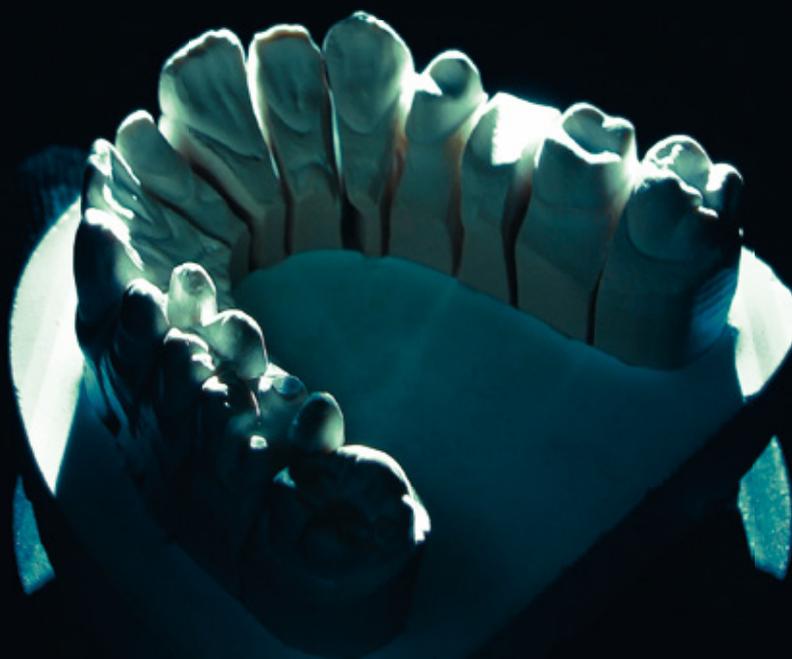


The industrial manufacturing with 5-axis simultaneous machining achieves an accuracy of

< 5 μm

Zfx™ Evolution series - Features

		Zfx™ Evolution	Zfx™ Evolution plus+
Open system (STL):		✓	✓
Number of cameras:		2	3 (2 + 1 Color Camera)
Cylindrical scanning area:	[mm]	120 x 80	140 x 80
Resolution:	[pixels]	1,296 x 964	1,296 x 964
Light source:	[Watt]	25, LED (green)	25, LED (green)
Number of projected line pairs:		128	128
Positioning unit:		2-axis (rotating, swiveling)	2-axis (rotating, swiveling)
Messzeit pro Aufnahme:	[ms]	980	980
Scan time single stump:	[sec]	35	35
Scan time per model:	[sec]	70	70
Postprocessing time per model:	[sec]	29	20
Measuring accuracy:	[µm]	< 9 per solid*	< 9 per solid*
Dimensions (W x H x D):	[mm]	320 x 434 x 477	270 x 440 x 444
Weight:	[kg]	22	15
Power supply:	[Volt]	AC 110 / 220 (50 - 60 Hz)	AC 110 / 220 (50 - 60 Hz)
Digitization of articulated models:		✓	✓
Digitization of direct screw-retained implant constructions:		✓	✓
Zfx Code-System		✓	✓
Open-Scan-Technology:		-	✓
Multi-Die Scanning:		optional	✓
Ready for 3D Printing:		-	✓
Color Camera:		-	✓
Texture Mapping:		-	✓



Zfx™ Scanner Recycling

Trade in your old system
and secure your premium!

You've got an old scanner system? Then exchange it and secure the new Zfx™ Evolution plus⁺, the dental scan champion 2016, at an unbeatable special price.

Scanners of the following manufacturers can be exchanged:

- | | |
|---------------------|---------------------|
| × Zfx Dental | × Imetric |
| × 3M | × KaVo |
| × 3Shape | × Medit |
| × Amann Girrbach | × Nobel Biocare |
| × B & D | × Open Technologies |
| × Dental Direkt | × Sirona |
| × Dental Wings | × Smart Optics |
| × Etkon / Straumann | × ZirkonZahn |

Please contact a sales partner in your locality to obtain information regarding eligible exchange models and their associated trade-in values.



Zfx™ CAD-Software

The right package for every user



Virtual implant supported Locator overdenture bar construction. Fully anatomical design shown transparently over the planned framework.

The Zfx™ CAD software supplied with the scanner can be integrated smoothly into the laboratory.

Basic version

The scanner is available including basic software which enables fully anatomical restorations as well as anatomically reduced frameworks to be constructed. The range of indications to be realized comprises veneers, inlays, onlays and individual crowns as well as Maryland bridges and bridges with several links.

More detailed information is available at www.zfx-dental.com

Additional software modules



Upgrade: Zfx™ Multi-Die

Function for scanning up to 12 dies in one scan (includes the necessary software function and appropriate accessories).



Upgrade: Zfx™ DICOM Viewer

For the visualization and storage of DICOM data (e.g. surgical templates).



Upgrade: Zfx™ Bite-Splint

The Zfx™ Bite Splint module allows the fast and high-quality construction of therapeutic bite splints.



Upgrade: Zfx™ Virtual Articulator

Enables digitalisation and integration of articulated models (articulator systems Artex®, Protar®, SAM®, Stratos® and Panadent®) into the software.



Upgrade: Zfx™ Abutment Designer

Tool for designing custom implant abutments. The associated library includes connector geometries for all common implant systems.



Upgrade: Zfx™ Bar Designer

Allows the digital design of all kinds of bars as well as the placement of separation attachments and Locators.



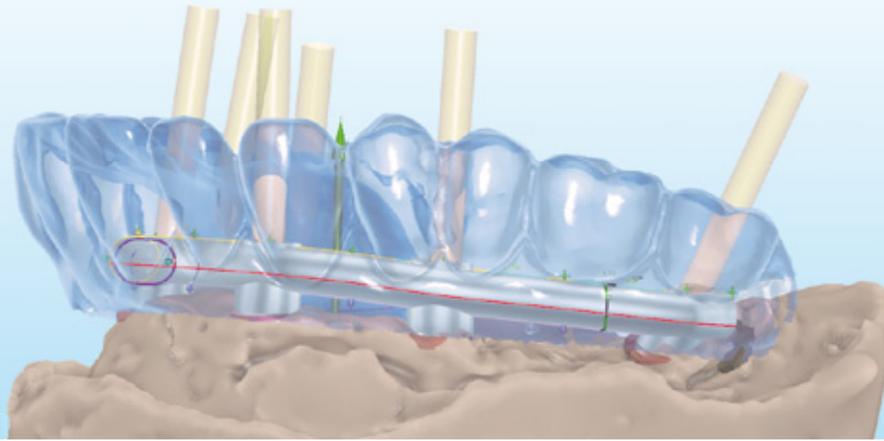
Upgrade: Zfx™ Provisional Crown & Bridges

Enables the fabrication of temporary restorations based on the scan (the anatomy is duplicated).



Upgrade: Zfx™ True-Smile

Module for displaying restorations in the software with almost photographic realism.



**Zfx scanner & software package:
Future-oriented technology with open interfaces**

Zfx offers the Zfx™ Evolution series including CAD software, which can be incorporated into the laboratory without restricting flexibility. Zfx provides the user with a package which is exactly matched to the requirements of his laboratory, and consists of a latest-generation scanner and the associated CAD software. Additional functions can be freely selected and combined at will due to the modular software structure.

Zfx scanner- & software package

- × 3D-Scanner of the Zfx™ Evolution series
- × Zfx™ CAD Software / open system
- × PC unit with 22" TFT display

Digital model production

The Zfx™ Digital-intraModel system enables the computer-aided production of physical models based on intraoral scans. The system consists of a software module used to define the emergence profile, segment the model and adjust the friction on the base plate, and the corresponding reusable base plates, pins and an intercuspidator. The resin models are produced in a Zfx milling center either using laser sintering or milling technology.



Zfx™ Digital-intraModel on base plates mounted in the intercuspidator. Implant models are delivered with integrated model analogs specifically developed by Zfx.

NEW



Upgrade: Zfx™ Encode® Converter

Software-module intended for the decoding of 3D information of BellaTek® Encode® Gingiva-former from Zimmer Biomet and for the construction of individual Encode® Abutments.



Upgrade: Zfx™ The Art of Shape

Enhancement of library including different tooth shapes for individual and aesthetic reconstruction of prosthetic restorations.



Upgrade: Zfx™ Digital-intraModel

For digital model construction including analog libraries of various implant manufacturers.

NEW



Upgrade: Tooth library "ZRS" by Manfred Wiedmann

Expansion of the tooth library with 180 designs (Sets for Upper and Lower, anterior and posterior teeth).

NEW



Upgrade: Zfx™ Baltic Denture Software

For the digital design and manufacturing of complete acrylic dentures.

Nearly unlimited possibilities in computer-aided manufacturing of high-quality restorations

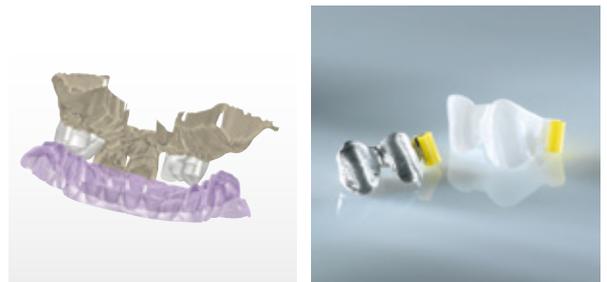
Attachments, implant abutments, screw-retained bridges and bars can also be designed virtually depending on the version of the Zfx™ CAD software.

There are almost no limits for the user when carrying out the virtual design with the Zfx™ CAD software. Integrated within the software are a database of tooth shapes and a library of connector geometries. Even though the processes are automated, manual modifications can be made at any time, and the planned restorations can be individually fashioned using free-form tools for example.

Abutment attachment
for removable restorations



Shear force distributor / attachment

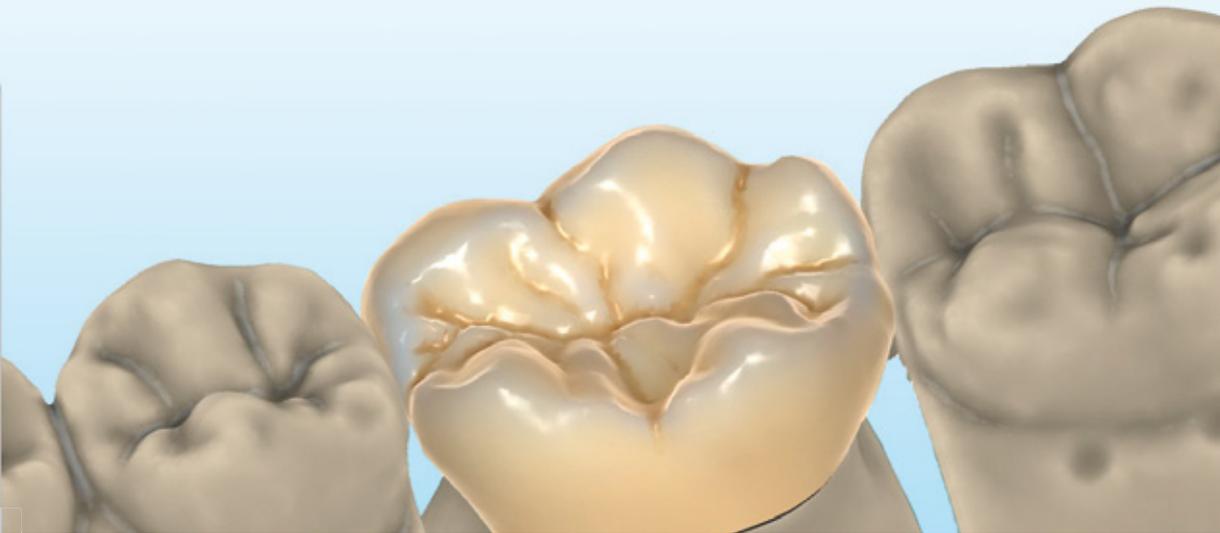
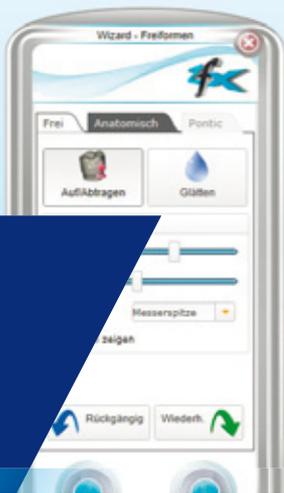


Bars with direct screw retention



Dolder bar

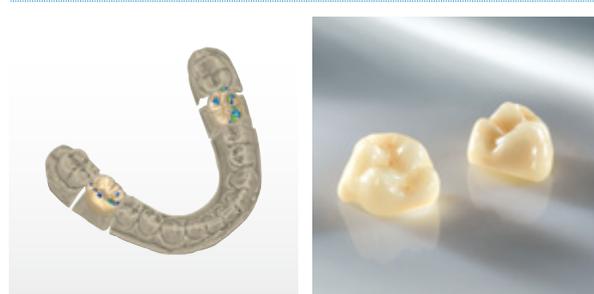




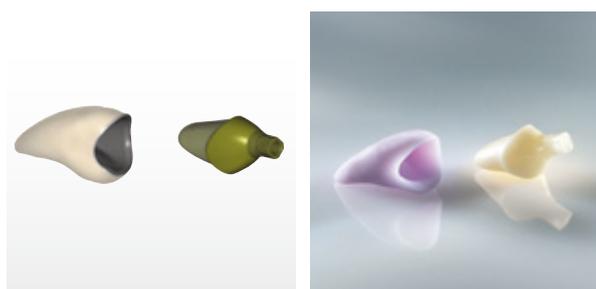
Hader bar



Monolithic crowns in translucent zirconium dioxide



Individual abutments
Ivoclar e.max / all-ceramic



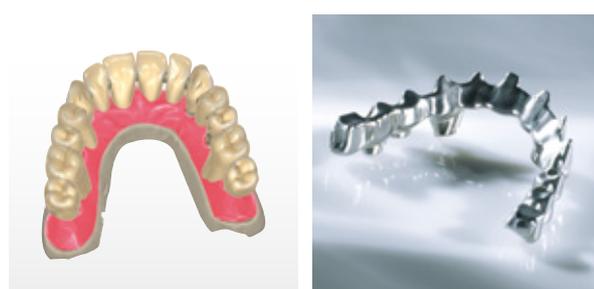
Hybrid constructions



Telescopes



Zfx™ Implant bridges and bars



Zfx™ System Components

Implant-supported construction with different implant systems of compatible elements

Implant abutments, bars and implant-supported screw-retained bridges which are 100% compatible with the selected implant system are designed with the Zfx™ CAD software.

The perfect connection

Whether the implants were inserted by Astra Tech, Biomet 3i, Camlog, Dentsply Friadent, Nobel Biocare, Straumann or Zimmer Dental, Zfx always provides the right abutments. A number of connector geometries which ensure compatibility with commonly used implant systems are stored in the library of the Zfx™ CAD software. The user first selects the implant used and then designs the implant structure.

In doing so, the compatible connector type is automatically taken into account in the design proposed by the software. When modelling is complete, the entire data record for the design together with information on the titanium base is sent to the milling center where the required element is produced. Implant abutments are available with screwed or glued titanium base.

A detailed brochure with all the components can be found online at www.zfx-dental.com



Zfx™ construction components



Titanium bases with rotation protection (Regular Design and/or Small Design)



Titanium bases without rotation protection (Regular Design and/or Small Design)



Multi-Unit titanium bases



Bridge screws for titanium, cobalt-chromium and zirconium constructions



Zfx compatible implant systems and types

Implant manufacturer	implant systems				
BIOMET 3I	Certain®	Conical®	IOL®	Low Profile®	ExHex®
BIOHORIZONS	Tapered Internal®				
BREIDENT	SKY uni.cone®	SKY fast and fixed®	SKY®		
CAMLOG	Screw Line®	VARIO SR®			
DENTSPLY IMPLANTS (ASTRATECH)	OsseoSpeed®	UniAbutment®			
DENTSPLY IMPLANTS	Multi-Purpose®	Frialit-Xive®			
MEGAGEN	AnyRidge®	EZ Plus®	Rescue Internal®		
MIS	Internal Hex®				
NOBEL BIOCARE	Active®	Brånemark®	Multi-unit®	Replace®	
OSSTEM	GS & TS System®				
P-I	Amplified®	Conical Abutment®	External Hexagon®	Morse Taper®	
STRAUMANN INSTITUT	Bone Level®	Muti-Base®	SynOcta®	Octa® (External Octagon)	
SWEDEN & MARTINA	Global®	Outlink ² ®	Premium Kohno®		
THOMMEN MEDICAL	SPI®				
ZIMMER	Tapered Screw Vent®	Shoulder Abutment®	SwissPlus®	Tapered Abutment®	Ezthetic Implant®



Screws for zirconium and cobalt-chromium / titanium



Evolution Matchholder



IntraScan Matchholder in 2 sizes (H4 and H7)



Model analogue (for digital and standard models)

Zfx™ Titanium bases

Multiple options for maximum flexibility!

Zfx offers titanium bases for customized two-pieces abutments in two different versions.

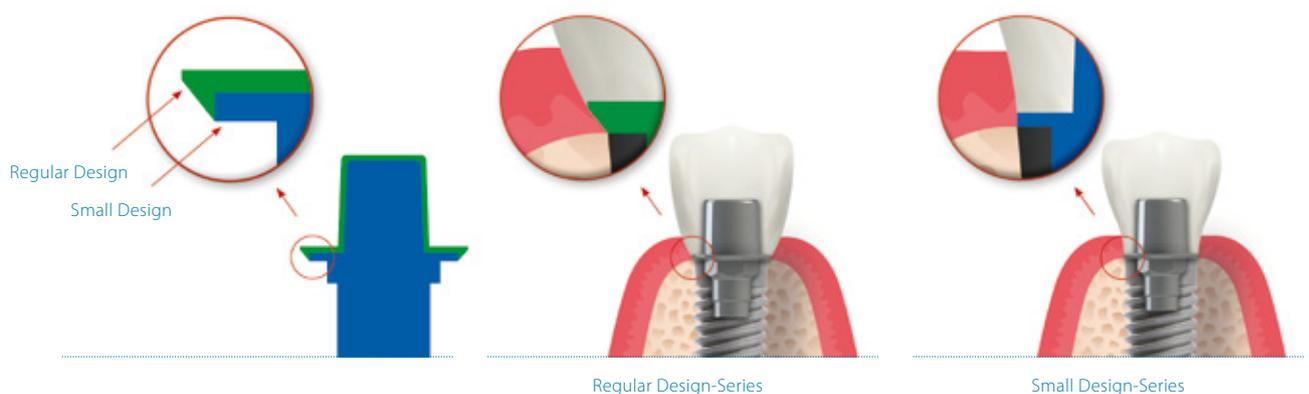
Two different types of titanium bases ensure there is always an optimal implant-abutment connection. The titanium bases with rotation protection are recommended for single-unit restorations; those without rotation protection are indicated when multi-unit restorations are planned. Additionally, titanium bases for multi-unit systems used for the incorporation of screw-retained bridges and bars (e.g. Zfx™ implant bridges and bars or Nobel Biocare's All-on-4) are new in the range of products.

All titanium bases – each with proper screws – are available in two designs: Regular with outwardly curved shape for patients with thick gingiva and Small with a straight and reduced shape for patients with thin gingiva. The Regular bases have a standardized connection geometry on the abutment side that matches that of nt-trading and of Medentika.

Thus, the geometries stored in the software solutions of Dental Wings, 3Shape and exocad can be easily selected as basis for the virtual design of abutments on Zfx™ titanium bases.

Thanks to the large supply of titanium bases, which are produced by Zfx in collaboration with Zimmer Dental, users have a choice: they can create computer-aided hybrid abutments or implant-supported bridges in their own laboratory or order them from Zfx. As the titanium bases' geometries will also soon be integrated in the 3Shape CAD software, flexibility for the dental technician will be further increased.

Regular vs. Small Design-Series





Zfx™ implant bridges and bars – Everything in one package

With the new Zfx™ Premium Restorative Packages for cobalt-chromium and zirconium, Zfx provides everything necessary for screw-retained, implant-supported bridge frameworks in one. As well as the framework with up to ten links, the zirconium dioxide package also contains the titanium bases and screws compatible with the particular implant system.

Zfx™ Premium Restorative Package for cobalt-chromium includes the framework with up to ten units and the necessary fixing screws. Tedious ordering of individual parts is now a thing of the past!

Zfx™ Premium Restorative Package
"zirconium dioxide"



Zfx™ Premium Restorative Package
"cobalt-chromium"



Screws
+
Framework
+
Titanium bases

Zfx™ Premium Restorative Package

5 AXIS
MILLING

WET+DRY

CERAMIC

CoCr

COMPACT

100mm
BLANKHOLDER

OPEN
SYSTEM

EASY
CLEAN



wet & dry

Full integrated
extraction unit, pump
and filter system!

Zfx | Inhouse5x

Zfx™ Inhouse5x wet & dry

New industrial standard in compact size



With the Inhouse5x, Zfx offers a compact milling unit suitable for 5-axis simultaneous machining that can be easily integrated into any laboratory.

The machine is equipped with a high-frequency spindle (6,000 to 100,000 rpm). Thus, together with a variety of milling strategies and tools, a faster and more economically efficient manufacturing process is guaranteed. Furthermore, Zfx™ Inhouse5x allows processing of materials in form of blocks (up to 15 blocks) and a tool magazine that can automatically change up to 28 tools. The placement can be adapted to the individual laboratory's needs.

The Zfx™ Inhouse5x is suitable already in basic version for milling and grinding resp. for the dry and wet processing, so various materials such as zirconia, ceramic, composite, PMMA, wax, cobalt chrome and titanium can be processed.

The recommended indications include:

- × Inlays and Onlays
- × Veneers
- × Crowns
- × Individual abutments on metal bases
- × Bridges of any span length
- × Two-piece implant bridges on metal bases



The Zfx™ CAM Manager allows for easy handling of the milling unit and provides a clear data and tool management.

Highlights

- × Open system (STL data files)
- × Compact dimensions - One-piece steel body weighing over 220 kg for high stability and improved milling performance
- × Simultaneous 5-axis milling, A- and B-axis with servo-motors
- × Dry and wet machining (Full integrated extraction unit, pump and filter system)
- × EasyClean: for fast and simple change-over between dry and wet processing
- × Spindle with speed range from 6,000 rpm up to 100,000 rpm (shaft with 4 mm diameter / 8,4 Ncm)
- × Milling and grinding on one machine
- × Automatic tool magazine for up to 28 tools (Part of the basic package!)
- × Multi-Block Support allows the positioning and management of up to 15 blocks
- × Blankholder with Ø 100 mm
- × Replacement tool management
- × Tool-break detection
- × Automatic length measurement

Materials

- × Zirconia
- × Glass ceramic (IPS e.max®, VITA Suprinity® ...)
- × Composite (Lava™ Ultimate, VITA Enamic® ...)
- × PMMA
- × Wax
- × Cobalt-chrome
- × Titanium

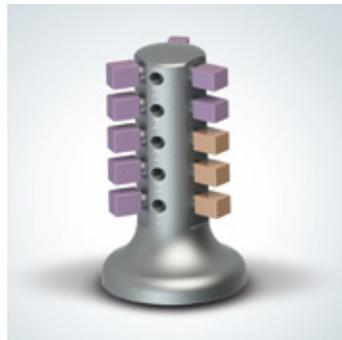
Zfx™ Inhouse5x *wet & dry*

New industrial standard
in compact size

High-end system components



One-piece body weighing over 220 kg for high stability and improved milling performance



Multi-Block Support allows the positioning and management of up to 15 blocks



Zfx™ Pre-block holder

NEW



Zfx™ Baltic Denture holder



Simultaneous 5-axis milling, A- and B-axis with servo-motors (dry and wet)



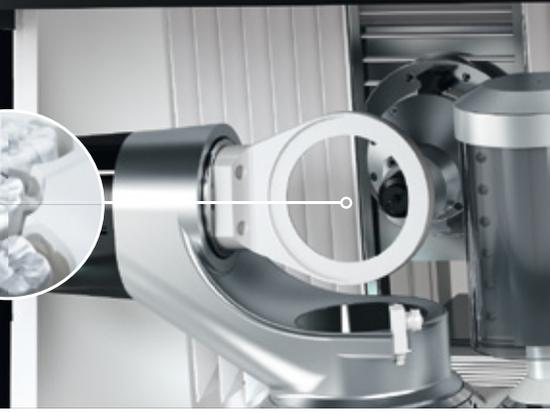
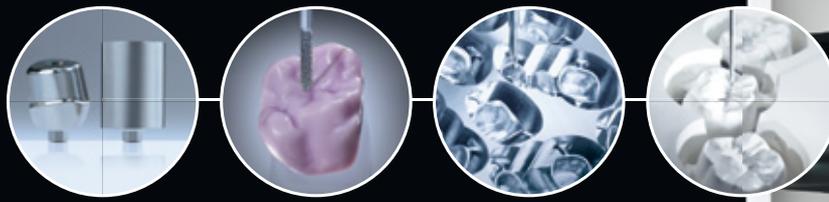
Automatic tool changer



Spindle with speed range from 6.000 rpm up to 100.000 rpm (shaft with 4 mm diameter / Torque 8,4 Ncm)



Measuring system for highest accuracy



Zfx™ Inhouse5x Upgrades



Upgrade 1: Pre-Abutment Processing

Enhancement for processing pre-abutment blanks.

Upgrade 2: Multi-Block Support (up to 15 blocks)

Allows the positioning and management of different blocks (e.g.: IPS e.max®, VITA Suprinity®, IPS Empress® ...).

Upgrade 3: Baltic Denture processing

To enable the manufacture of complete Digital Acrylic Dentures using the the Zfx™ Baltic Denture Software.

Upgrade 4: Multi-Unit processing

Enables the multi-unit production for cobalt chrome, titanium, zirconium and PMMA.



Zfx™ pre-abutment blanks with various geometries from well-established implant manufacturers.



Zfx™ Inhouse5x - Features

Number of axes:		5, synchronized control
Traverse range (x, y, z axis):	[mm]	180x190x110
Rotation axis:	[degree]	360° (endless)
Swivel axis:	[degree]	-30° up to +120°
Repeat accuracy:	[mm]	0.001
Speed range:	[rpm]	6,000 – 100,000
Output power:	[Ncm]	8.4
Run out (taper):	[µm]	≤ 1
Chuck clamping range:	[mm]	up to Ø4
Direct tool chucking:	[mm]	4
Tool length:	[mm]	45
Magazine – holding quantity:		28
Dimensions (BxHxT):	[cm]	66x167x110
Weight:	[kg]	330



Zfx

Zfx milling center

The expert for high-end prostheses

Zfx milling centers provide a comprehensive range of services which are implemented in a standardized process chain by experienced staff.

Zfx Network

All Zfx milling centers – owner-operated production workshops of the company at home and abroad – provide a fully optimized process chain which is customized down to the last detail for the manufacture of high-quality dental prostheses – from the scanning technology and software systems to the milling machine. An equally high quality of restorations is ensured everywhere due to a common technology standard at all locations.

Range of services

All digital process steps, from the scanning of a model to the design and manufacture, are carried out in Zfx milling centers if required. In doing so, all available materials can be machined, and numerous indications – such as tooth and implant-supported crowns, bridges, inlays, onlays, veneers, implant abutments, bars and attachments – can be realized. Close collaboration between the dental clinic and laboratory is required in order to optimize the production workflow. This is provided by the Zfx™ Dental-Net – an online platform for data management and communication.

Advantages

- × *Comprehensive range of services*
- × *Unique technology expertise*
- × *Competent and personal consulting*
- × *Higher standard of quality thanks to the certification of all Zfx partners*
- × *Fully optimized, common process chain for industrial manufacturing*
- × *5 year warranty on all indications*
- × *Authorized milling partnership with Ivoclar Vivadent and Vita*



Zfx is an official milling partner of Vita and Ivoclar Vivadent

Individual dental prostheses

Unlimited options



Zfx produces high quality dental prostheses on natural teeth as well as on implants. These can be made from a wide range of different materials.

From the first impression to the finished prosthesis

No other method is as efficient and economical as the industrialized production of dental prostheses! Zfx milling centers offer the best of the best in this regard:

- ✗ Favourable conditions thanks to our organized purchasing syndicate for raw materials, tools and equipment.
- ✗ A perfected process chain: from the 3D model to the ready milled prosthesis
- ✗ A regional supplier partnership with short distances and direct, personal communication.
- ✗ ISO certification and 5 years warranty!

Overview of materials and indications



	Inlays, Onlays	Dental crowns	Dental bridges
PMMA / Multi Color	●	●	●
Cobalt-chromium	●	●	●
Titanium	●	●	●
Zirconium dioxide	●	●	●
Zirconium dioxide "effect"	●	●	●
Zirconium dioxide "BionX™"	●	●	●
Glass ceramics / Composite	●	●	●
Burn-out plastic	●	●	●
Fibre reinforced polymer	●	●	●
Wax	●	●	●



NEW

Zfx™ BionX²

It makes no difference whether users have their own scanners with open interfaces or whether they take advantage of the Zfx scanning service. Starting from the digitalized model and the virtual design, the milling paths for optimum manufacture are calculated in the milling center using specialized CAM software. This is carried out based on pre-set parameters and sophisticated milling strategies, which have been specially developed by Zfx for all available materials.

Milling takes place in 5-axis machining centers. The future oriented technologies provide the highest precision for implementing numerous indications with widely differing materials. Perfection leaves no room for compromises!

High-Quality
Screw-retained
implant bridges

Abutments	Bars	Implant bridges	Shear force distributors
● *	● *	● *	
●	●	●	●
●	●	●	●
● *	●	●	●
● *	● *	● *	
● *			
● *			
● *	● *	● *	●
		●	
● *	● *	● *	●

* in combination with metal bases only

High-tech manufacture

Where productivity meets quality

Zfx ultra-modern manufacturing technologies give precise results – for maximum added value thanks to minimum rework.

Manufacturing units, which are capable of implementing even highly complex geometries by means of 5-axis simultaneous machining, are used in Zfx milling centers. Both available machines have been carefully tested over many years and have been optimally incorporated into Zfx's digital workflow.

SAUER – ULTRASONIC 20 linear

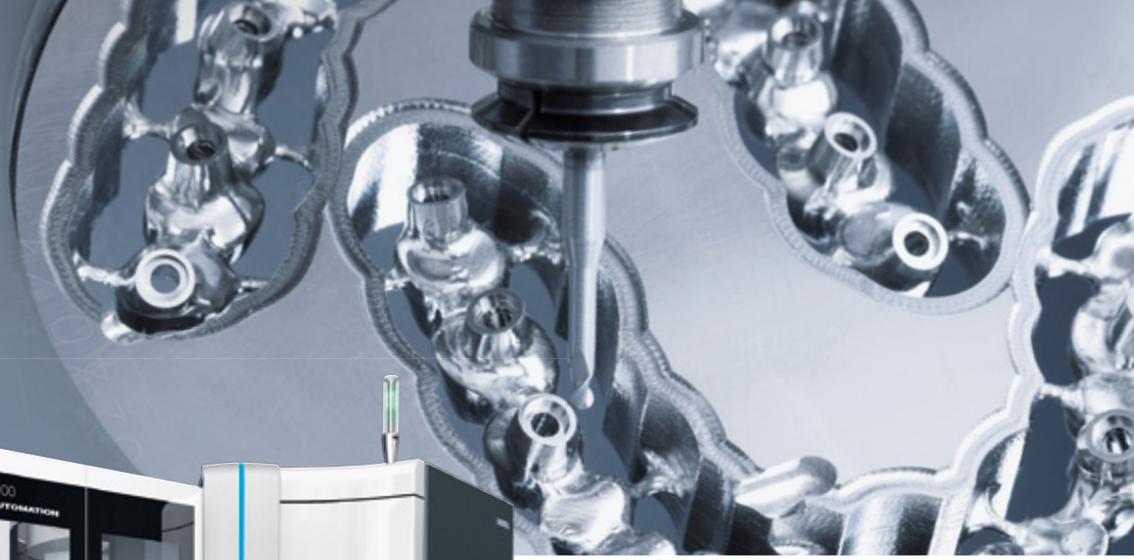
The SAUER – ULTRASONIC 20 linear milling machine is based on a special actuator system, by means of which an ultrasonic frequency is transmitted from the spindle to the tool holding fixture by means of induction. This generates an additional oscillating kinetic movement in the tool, resulting in a considerable reduction of the effective process forces, a significant increase in the chip removal rate and the best surface quality for the dental prosthesis.



The industrial 5-axis machining enables highly precise production of complex structures such as screw-retained implant bridge frameworks.



Zfx milling technology operates with low process forces, and in combination with long-standing Zfx experience it guarantees productive chip-removal rates and highest surface qualities.



Manufacturing units, which are capable of implementing even highly complex geometries, are used in Zfx milling centers.

Zfx Scanservice – Designed by specialists

As well as the scanner and software which are integrated into the laboratory, the range of services from Zfx also includes a scanning service.

Users can send their models to the milling center. On-site, the models will be digitalized using a high precision scanner from the Zfx™ Evolution series and the required restoration is then designed on this basis. This is followed by the computer-aided manufacturing. This service is particularly suitable for laboratories which do not have their own scanners and for special complex designs where expert advice is required.

Scan service at a glance

- ✕ Scanning of opposing jaws, squash bite, crowns and inlays
- ✕ Scanning of an articulated casting
- ✕ Measuring accuracy deviation of less than 9 µm across the scan volume!
- ✕ Articulator systems: Artex®, Protar®, SAM®, Stratos®, Panadent® and others on request



Articulated models can be recorded easily and quickly by any scanner from the Zfx™ Evolution series. These can then be immediately integrated into the Zfx™ Virtual Articulator within the Zfx™ Dental Designer Software.

Zfx™ Manager and Zfx™ Dental-Net

For uninterrupted data flow between practice,
laboratory and milling center

The unique Zfx™ Dental-Net online platform for data exchange and communication is accessible via the Zfx™ Manager, which controls all the Zfx™ system components.

Zfx™ Dental-Net at a glance

- × *Location-independent access:
Can also be used with smart phones
and tablet PCs with Apple or Android
operating systems*
- × *Synchronisation ensures that
data are always up-to-date*
- × *Continuous control and
exchange possible during the
production process*

- × Taking of impressions in the dental practice
- × On-screen checking of generated data files
- × Opening of Zfx™ Dental-Net via Zfx™ Manager and creation of a new project
- × Data upload and automatic informing of the selected partner laboratory



Zfx™ Manager from the impression to production – Zfx's digital workflow is implemented quickly and flexibly via the Zfx™ Dental-Net.



- × Order intake and checking of information provided
- × Digital design of the restoration ordered
- × Upload of design data
- × Consultation with the dentist if necessary
- × Selection of the milling center and synchronisation of data

Zfx™ Manager at a glance

- × Project planning and order creation
- × Automatic cost calculation
- × Data upload to the Zfx™ Dental-Net
- × Selection of system components (3D scanner, CAD and CAM software)
- × Selection of milling center
- × Statistical evaluations



- × Cost proposal, release of data
- × Production in the milling center, consultation with the dental technician if necessary
- × Delivery of the machined elements to the laboratory

Globales Network

International expertise network,
personal, regional service



Zfx focuses on international network structures and concentrating expertise for optimum local service.

Zfx Partner network

Zfx consists of a decentralized network of specialized and efficient milling centres. Owner-operated companies use standardized technologies tested within the network. An equally high quality of restorations is ensured everywhere thanks to a common technology standard at all locations.

Personal consultation

Dental technology is a matter of trust! Zfx therefore ensures that every laboratory has access to a competent personal adviser from the milling center. The advisor will provide assistance by telephone and by remote service as well as on site if required.

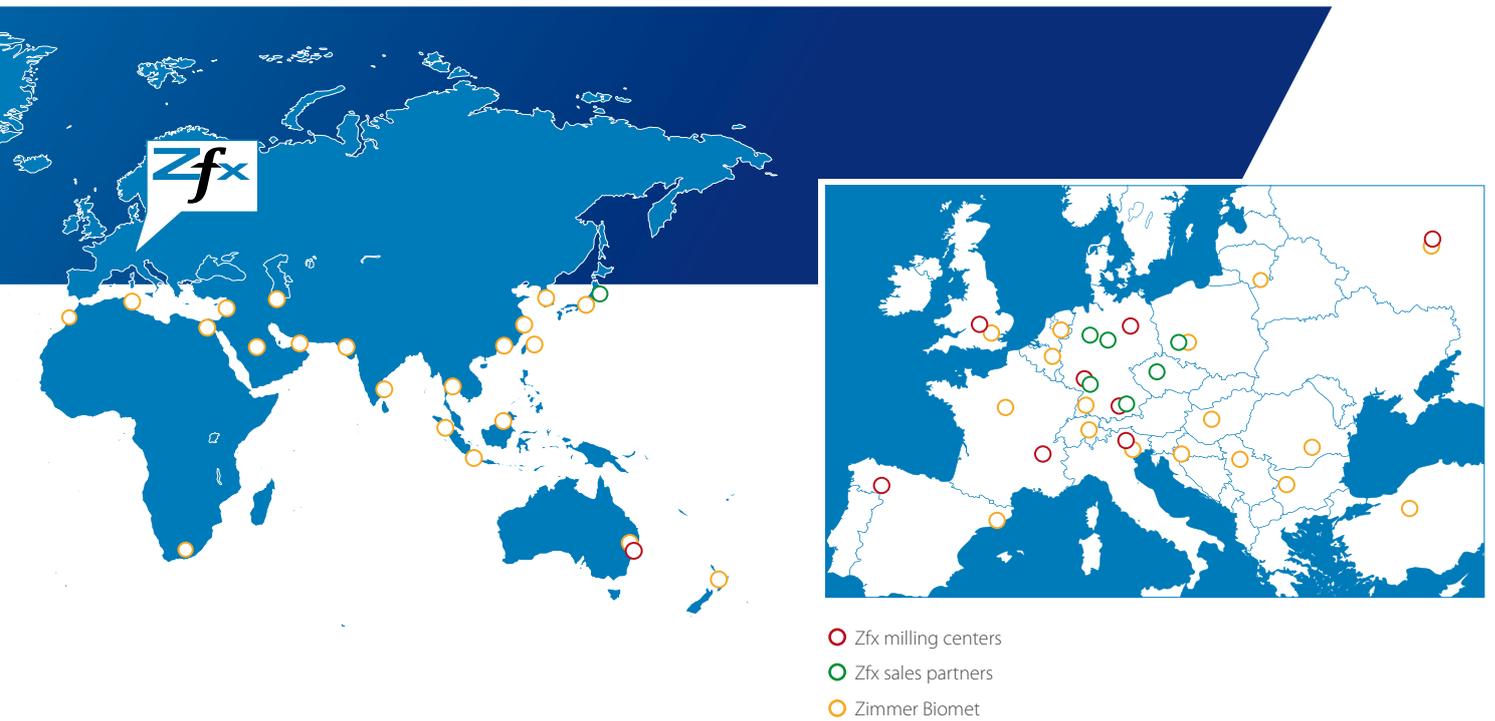
Worldwide Sales Partners

For the optimum customer service, Zfx offers a comprehensive regional network of sales partners. Each of them has an expert that specializes in Zfx high-tech CAD / CAM technologies. At the local Zfx Showrooms, interested clinicians and technicians can experience and learn about the complete digital workflow.

A list of all official global distributors can be found on our webpage at zfx-dental.com



The in-house manufacturing ensures the required know-how to carry out service requests fast and cabably – also on-site, if needed.



Zfx milling centers

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Zahn success formula