

THE BEST IS WHAT ONE BELIEVES IN!

100% Prettau Bridge with Zirconia Screw Thread by the Screw-Tec-System

Iowa Jörg



100% Zirconia

As pre-prosthetic measures, bone grafting had to be carried out in the upper and lower jaw in order to fulfil the patient's desire for a fixed or partly detachable dental prosthesis. After thorough preparation, four temporary snap implants were inserted in the upper jaw during the bone grafting process as additional support and provided with interim prostheses, as in the lower jaw too. In a next working step we decided to place six implants in the upper jaw (fig. 1) and four implants in the lower jaw. Since the remaining teeth 41, 42, 43, 44, 45, 48 should have been included in the lower jaw, it was a corollary to separate the step "lower jaw construction" into two parts (fig. 2).



Fig. 1 / 2

The arrangement of the prosthetic teeth was done with natural teeth (made of resin, fig. 3) and the finer details were additionally modelled. Because of the unfavourable direction of the implants placed in the upper jaw, a solution had to be found which made it possible to skilfully hide the implants in region 12 and 22 in the occlusal screw-retained structure. The solution was quickly found with the new Zirkonzahn ZZ-Screw-Tec-System. One of the best solutions for a stable and

convenient secondary structure under these conditions was the transversal screw connection within the region 12, 21. With a transversal screw connection for 12, 21 stresses and strains can be compensated and the span of the bridge from 13 to 23 guarantees sufficient stability. In the next step, the primary construction was duplicated with frame and the finishing process carried out. The Zirkonzahn Screw-Tec modelling sockets (fig.4) was then positioned in the suitable depth and direction.



Fig. 3 / 4

Before milling, the construction will be glued in a frame plate, which was previously milled out very carefully, so that it fits perfectly afterwards. As soon as it is fixed on the model (fig. 5), it is less dangerous that frictions could affect the fit.

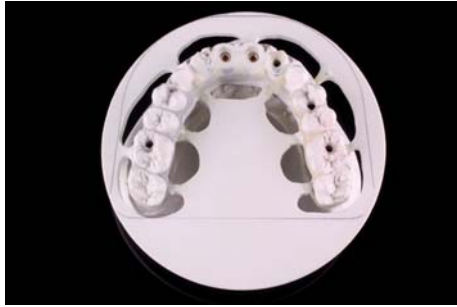


Fig. 5/6

User-friendly handling of the Zirkograph (fig. 6) enables trouble-free milling and an outstanding fit with ICE ZIRCON and translucent ZIRCONIA PRETTAU alike.

In the case at hand we decided to use Zirconia Prettau. Milling and finishing processes render the Zirconia Prettau blank into a perfect reproduction of the model in unsintered zirconia (fig. 7). Finally, the blank is treated with Colour Liquids and sintered overnight.



Fig. 7

The milled out thread shown in fig. 8 clearly displays the range of application options feasible with Zirkonzahn's Screw-Tec system (fig. 9). Diligence and cleanliness throughout the entire process led to marvellously precise and aesthetically beautiful results (fig. 10).

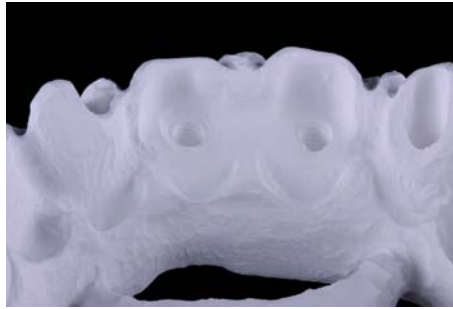


Fig. 8/9/10



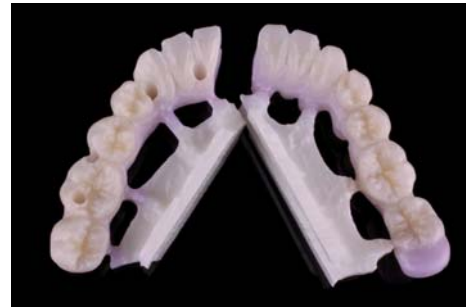
Zirkonzahn Screw-Tec-System



The same procedure, apart from one part of the structure, was applied for the lower jaw. The direction of the implants placed was favourable: to plan for using the occlusal screw-retained structure was therefore effortlessly possible 33. In the fourth quadrant a tooth-supported structure of 41-48 was manufactured (fig. 11, fig. 12, fig. 13.)



Fig. 11 / 12 / 13



After sintering, the secondary construction was modelled with Rigid Transparent + blue (fig. 14). Blue colouring was used for better recognition.



Fig. 14

The size difference of approx. 20% is clearly recognizable (fig. 15.1). After the sinter process the entire structure of the upper jaw was fitted, so that this working step was completed too.

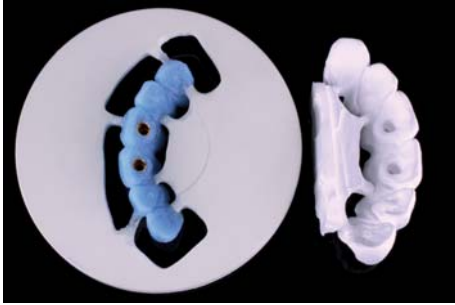


Fig. 15.1 / 15.2

In order to model the gums in a vigorous way and also colour them with the individual patient's tooth colour, it is necessary to layer some ceramic material. As a last working step after the doing final glaze-firing, the figures 16 and 17 show the titanium threaded sleeves of the Screw Tec System, which are glued into the previously milled zirconia thread.



Fig. 16 / 17

Now the work is done (fig. 18, fig. 19, fig. 20, fig. 21). Both, the precision and the excellent manufacturing properties of the Zirconia Prettau material from Zirkonzahn, let thrive the wish to do more.



Fig. 18 / 19

The insertion of the entire structure into the patient's mouth proceeded properly. The satisfaction and wellbeing of the patient were totally discernible in a beaming smile.



Fig. 20 / 21

This case was milled with the manual ZIRKONZAHN zirconia milling system.



Move The World With Your Hands!

Luigi Steger