EN

AMANNGIRRBACH

FULL DENTURE SYSTEM

ceramill® fds

THE INHOUSE MOVEMENT®

ceramill® fds

FULL DENTURE PROSTHETICS ACCORDING TO DENTAL TECHNOLOGY LOGIC. PRECISE, CUSTOMISED, AESTHETIC.

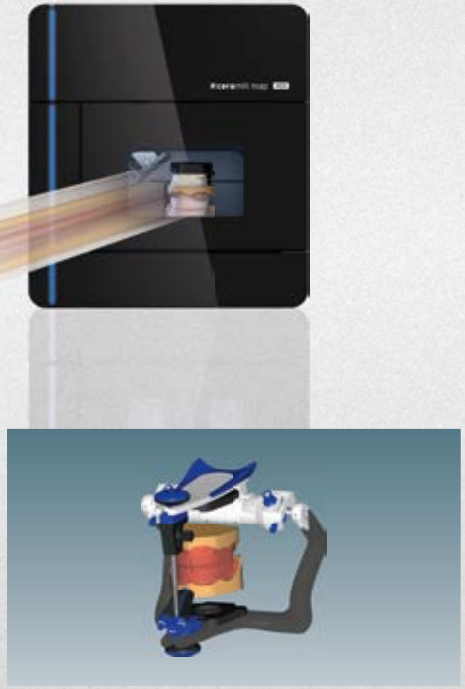
Ceramill FDS (Full Denture System) describes a completely continuous workflow for fabricating full dentures on a wax base. In contrast to full dentures including dentition milled from acrylic, the denture base fabricated using setting-up wax can be adjusted, if necessary, after try-in by the dentist. An exact intraoral intermaxillary relationship can be ensured thanks to the possibility of influencing the fit and function of the denture. The risk of having to remake the denture due to incorrect manual bite registration is also avoided. This guarantees economic use of material without financial risk for the dental lab.

CONTINUOUS IN-HOUSE WORKFLOW FOR FULL DENTURES ON A CAD/CAM BASIS

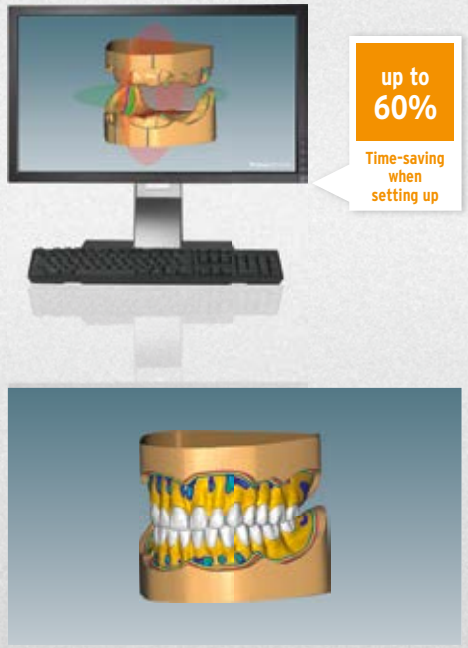
Ceramill FDS is characterised by unique continuity and seamless linking of all software and hardware components. Implementation is completed using the "Ceramill D-Flow" software module and the 5-axis hybrid system Ceramill Motion 2. During development, Amann Girrbach continually focussed on the entire workflow. Seamless interlinking of all system components created a convenient workflow in which the time-consuming setting up procedure is shortened by approximately 60% - full value creation is included. The end of the process results in reproducible, functional full dentures with a high degree of aesthetics and precision.

DIGITISING THE PATIENT SITUATION → SCANNING → DESIGNING

Functional recording and digitisation of patient data with the Artex articulators and Ceramill Transfer Kit



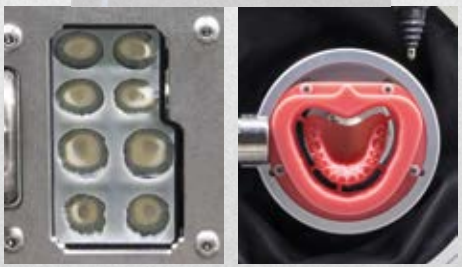
Scanning of patient data using the Ceramill Map400 scanner



Designing the full denture using the Ceramill D-Flow software

BASAL ADAPTATION → MILLING (WET) → CONNECT → CHECKING

Automatic adaptation of the tooth bases to the alveolar ridge



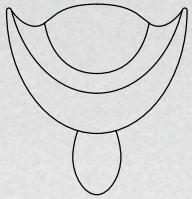
Basal adaptation of the denture teeth and milling of the wax base

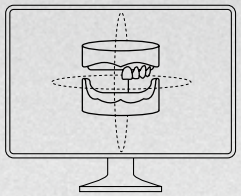
Connecting the denture teeth with the wax base

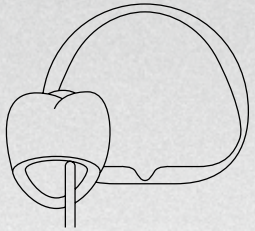
Checking the function – The teeth can be re-set and high spots eliminated

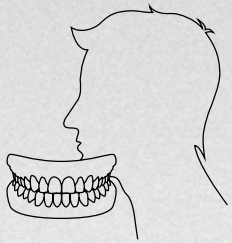
ceramill® fds

FABRICATE CUSTOMISED FULL DENTURES EFFICIENTLY AND PRECISELY









Ceramill FDS

Impression taking	Model analysis / Setting up Waxing up	Wax base fabrication (CNC) Adaptation of tooth bases (CNC)	Try-in
	Effective working time: 62 min.*		

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Impression taking	Model analysis / Fabricating the wax base / Setting up Waxing up	Try-in
	Effective working time: 162 min.	

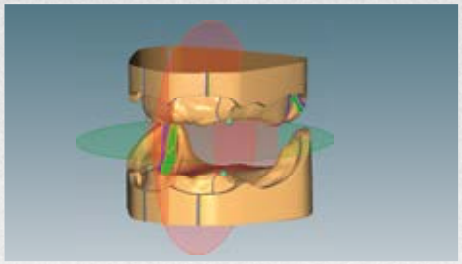
Comparison of time required for the fabrication of full/full dentures. Determined average values.
Source: Amann Girrbach R&D

* incl. additional activities for machine fabrication

_ Elimination of sources of errors and knowledge gaps when setting up
_ Increased convenience when setting up and waxing up
_ Approximately 60% saving in working time during setting up, which can be used profitably
_ No grinding adjustments when setting up (wax contraction, contact points)
_ Assured aesthetics and cost-effectiveness thanks to the possibility of adjustment after try-in and complete reproducibility

EASY AND RELIABLE - CUSTOMISED AND PRECISE

Ceramill D-Flow is an upgrade module for the Ceramill Mind software and was specially developed for designing customised, precise full dentures. It is used after model fabrication and articulating using the manual procedure and replaces all working stages up to the wax try-in with a seamless digital workflow. The user is guided step-by-step through the working process and benefits from a high degree of convenience, efficiency and process reliability.



MODEL ANALYSIS

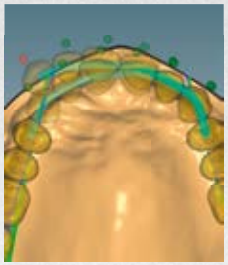
Model analysis in the Ceramill D-Flow software is based on the TIF system. The software guides the user through the individual process stages, in which the respective anatomical details are marked. Following this, the joint basic statics of the upper and lower jaw models are calculated in the form of a visual representation of all functionally relevant setting up and tolerance areas. The sets of denture teeth are then selected based on these results followed by automatic recommendation for the set-up.

AUTOMATIC SETTING UP BY THE INTEGRATED SETTING UP CONCEPT

The tooth set-ups of the upper and lower are stored in the software according to the contact point guidelines of the tooth manufacturer. The integrated setting up concepts thus guarantee an ideal tooth-to-tooth relationship and form the basis for interference-free function. To ensure an optimally functional and aesthetic outcome, the user receives a best-fit recommendation from the available sets of teeth, which were automatically determined from the values of the previous model analysis. Sources of error and gaps in knowledge when setting up are avoided in this way in favour of a quick, easy solution with accurately fitting results.

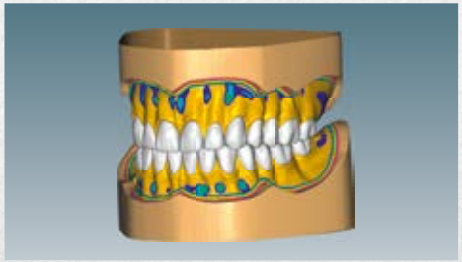
CERAMILL ARTEX VIRTUAL ARTICULATOR

Excursions of the mandible can be simulated in the virtual articulator. This allows any interfering areas of the teeth in protrusion, laterotrusion and retrusion to be visualised. The dynamic occlusion can be set by moving the teeth directly in the software.



CUSTOMISATION OF THE SET-UP

To meet the aesthetic requirements when setting up the teeth, the set-up can be customised individually or with the aid of the chain tool. If the position of a tooth is changed when working with the chain tool, the adjacent tooth follows automatically whereby the proximal contacts always remain intact. Posterior teeth can be moved in blocks of eight while maintaining the contact relationships and in accordance with the tooth manufacturer's guidelines. This allows the set-up to be adjusted individually, as far as permitted by the limits calculated in the model analysis.



GINGIVA FORMING

Ceramill D-Flow incorporates the function of automatically creating denture bases and gingiva, which produces an optimum initial basis for quick and easy, yet customised design of denture bases and gingiva. For example, gingival characteristics such as alveoli profiles or papillae contours can be generated and the minimum thickness of the denture base guaranteed using different modelling and setting options.

BASAL ADAPTATION

The denture teeth are automatically adapted basally with a defined gap to the alveolar ridge. Interfering areas are removed later using the Ceramill Motion 2 (5X), eliminating the need for manual basal reworking of the teeth. Further, in future it will be possible to insert rotational security basally into the teeth.

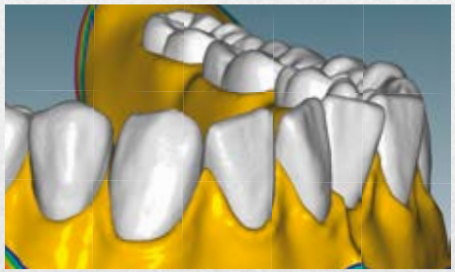
TOP FUNCTION – PERFECT RESULT

The Ceramill Full Denture System fabricates full dentures in a working process designed according to dental technology logic that are also characterised not only by perfect occlusal relationships but also by individuality and aesthetics. The Ceramill D-Flow module offers a wide range of functions and design possibilities to meet patient-specific requirements.

Design and customisation of the papillae, alveoli, tuberosities and frenula

Wax try-in without additional manual editing

Design and customisation of the anterior set-up and gingiva with cervical region

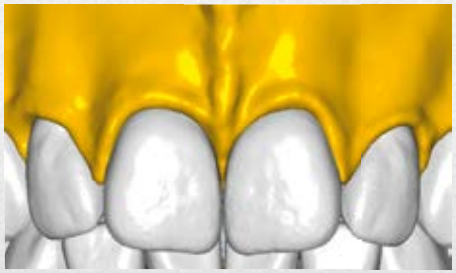


Wax try-in without additional manual editing

Design and customisation of the palatine rugae

Wax try-in without additional manual editing

Design and customisation of the labial frenum



Wax try-in without additional manual editing

_Digital model analysis and the integrated setting up concepts of tooth manufacturers ensure perfect occlusion and function

_Best-fit recommendation of the set of teeth with automatic set-up

_Quick, easy customisation and positioning of the anterior teeth

_Perform mandibular excursions in the virtual articulator for setting the required posterior tooth guidance

_Basal adaptation of the denture teeth at the press of a button - time-consuming, manual reworking is no longer required

COMING SOON Milling of acrylic bases

MILLING OF THE WAX BASE

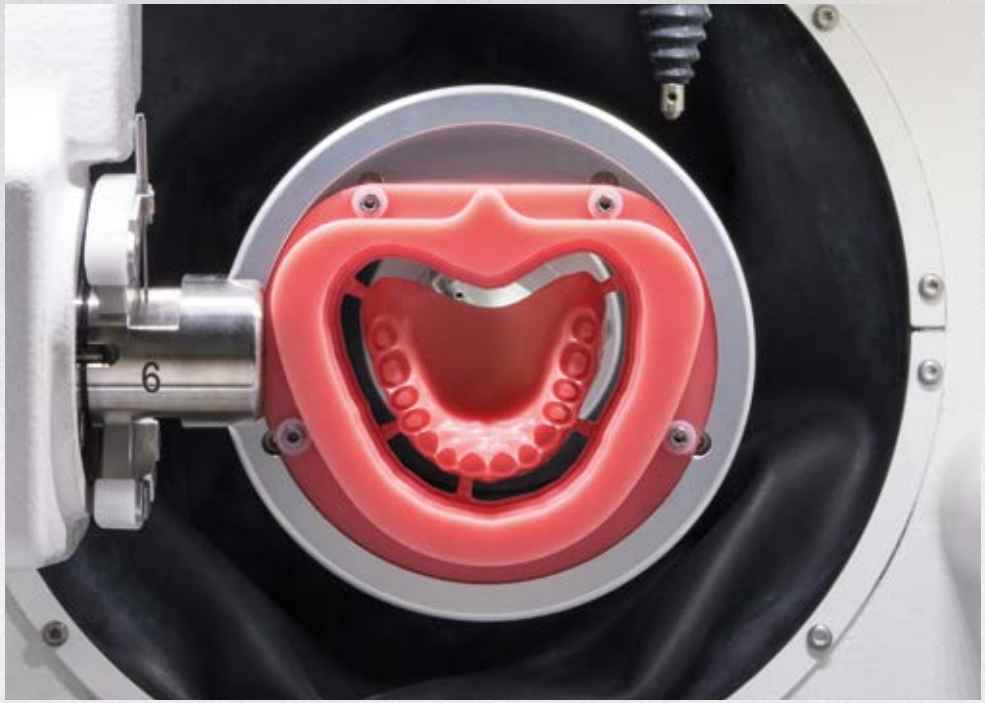
The wax base for functional dentures fabricated using Ceramill FDS is milled in the wet mode with the Ceramill Motion 2 (5X). Special cutters with a longer shank also reach deeper basal cavities and guarantee clean milling of the tooth sockets according to previously defined functional aspects. As the full dentures are fabricated in setting-up wax, any adjustments are possible without problem.

_Ceramill CAD/CAM uses a proven, full-denture quality setting-up wax

_Enlarged blank shape covers virtually all types of full dentures

_Gum-coloured blank for aesthetic check intraorally (Class 1 medical device)

_Blank milling under water cooling prevents smearing and distortion, ensuring optimum fit of the denture and teeth in the tooth sockets



Ceramill D-Wax – quality sheet wax with enlarged blank shape for a wide range of full dentures

Roto D-Wax with longer shank for optimum milling results, even with deep basal cavities

Ceramill D-Wax blank holder with enlarged recess

MILLING THE DENTURE TEETH

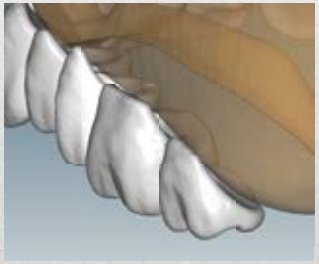
Full dentures fabricated using Ceramill FDS obtain maximum aesthetics through the use of high-quality, commercially available denture teeth. These are embedded at the factory with special wax in a blank holder developed specifically for Ceramill CAD/CAM. The interfering areas on the base of the denture tooth next to the alveolar ridge are adapted in the Ceramill Motion 2 (5X) in approx. 1 minute, depending on the amount of material to be removed. The result is highly precise and functionally prepared denture teeth, which meet the standards of customised, aesthetically high-quality full dentures. In future, Ceramill D-Set denture teeth will be able to be adapted occlusally, which will enable fabrication of full dentures.

_Patented Plug&Play blank holders for easy insertion and automatic basal adaptation of the denture teeth

_High-quality, commercially available denture teeth ensure quick, aesthetic and functional results with excellent intraoral comfort

_Calibration of blank holder guarantees exact processing of the denture teeth

_Occlusal denture tooth adaptation will in future enable the fabrication of full dentures



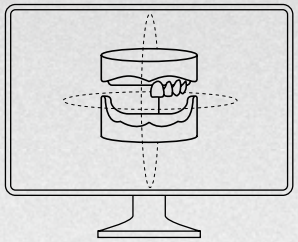
Automatic basal adaptation of the denture teeth in the Ceramill D-Flow software

Ceramill D-Set: commercially available denture teeth for Ceramill CAD/CAM

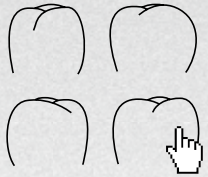
Easy insertion of the basally adapted denture teeth in the tooth sockets of the wax base

WORKING AND ORDERING PROCEDURE FOR CUSTOMERS

DAY 1

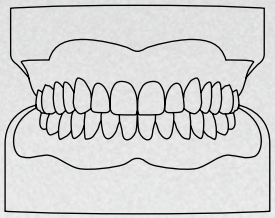


Model analysis

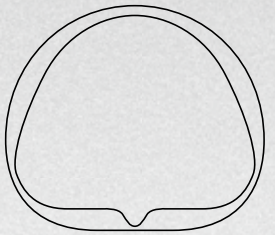


Selection of the teeth in the Ceramill D-Flow software

Ordering of the tooth blanks from the manufacturer (e.g. Heraeus Kulzer)

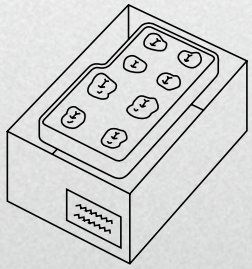


Design of the full denture

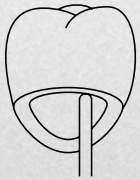


Milling of the wax base

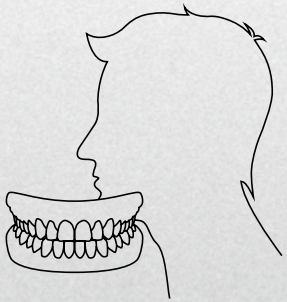
DAY 2



Delivery of the tooth blanks



Basal adaptation of the denture teeth



Connection, check and try-in

ORDERING INFORMATION

Software

179147	Ceramill D-Flow (min. Win 7)

Hardware

760018	Ceramill FDS Starterkit for Ceramill Motion 2 (5X)
Contents:	
760570	Ceramill D-Wax (30 mm) 2 blanks
760301	Ceramill Test (20 mm)
179282	Blank holder M2 (5X) XL
179283	Blank holder M2 (5X) D-Set
179285	Storage bar blank holder
760630	Roto SF1,2 Green
760631	Roto 1,0 Red
760633	Roto 3,0 Red
179286	Spindle cap Ceramill Motion 2 2.0

Ceramill D-Set patented denture tooth blanks

Pala Mix&Match DS, Heraeus Kulzer*:

Pala Premium 6 DS, A2, A3, A3,5
Pala Mondial 6 and 8 DS, A2, A3, A3,5
Pala Idealis 8 DS, A2, A3, A3,5

Additional ranges of denture teeth undergoing validation.

*Order from the tooth manufacturer

Ceramill FDS Starterkit

Ceramill D-Set for Ceramill CAD/CAM

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