Your formula for quality dentures

CediTEC  Denture Base

or

V-Print  dentbase

+

CediTEC  Adhesive

+

CediTEC  Denture Teeth

=

CediTEC® / V-Print® dentbase

PROCESSING INSTRUCTIONS

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CediTEC® / V-Print® dentbase

The CAD/CAM solution for permanent dentures

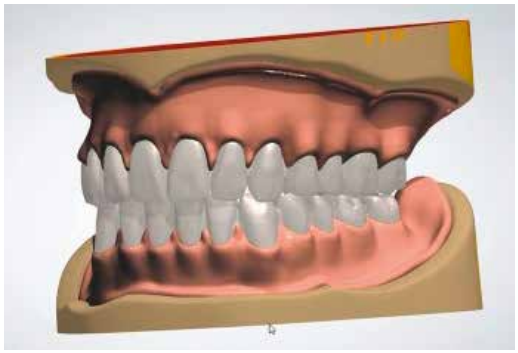
Aesthetic, precise, customised and economical – these are the requirements that digitally fabricated full dentures are expected to fulfil.

Are you thinking about employing the advantages of digital production for dentures too? Benefit from the wide range of advantages:

- No wax-up
- Fewer appointments
- (Fully) digital planning of the full denture including try-in
- Customised design for a natural look
- Automated production of denture parts
- Can be reproduced rapidly and simply

You can create dentures completely using a CAD/CAM process using products in our portfolio that have been especially developed for the fabrication of dentures. These consist of V-Print dentbase, a 3D printing material for the manufacture of denture bases, CediTEC DB, a milling material for the fabrication of the denture base as an alternative, CediTEC DT, a milling material for the creation of denture teeth, and CediTEC, a luting system in practical cartridges which bonds the base and teeth to one another.

The denture base made of V-Print dentbase and try-in were produced using the SolFlex 170 HD.



Before treatment:
Digitally planned full denture

Production of the try-in models with V-Print Try-In

Functionality, accuracy of fit and aesthetics are the be-all and end-all when it comes to dentures. In order to achieve perfect results, VOCO is now offering in **V-Print Try-In** a 3D printing material for functional trying-in of full and partial dentures. This makes it possible to assess the fit, occlusion, function, phonation and aesthetics before production of a permanent denture, for example, and allows corrections to be made using wax or veneering material if and as required. V-Print Try-In can be printed in thick layers and thus ensures a rapid and efficient process with accurate results. The production of transfer and grinding templates, correction impressions and occlusal impressions is also possible with V-Print Try-In.

Try-ins made from V-Print Try-In incl. support structures.

Note
Please observe and follow the steps regarding post-processing of 3D-printed objects on page 18.

After removing the support structures, grind the support structure attachment points.
It is also possible to make design corrections using a cross-cut carbide bur, for example.

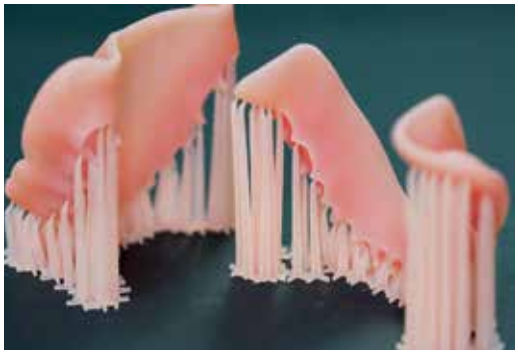
Check the occlusion in the articulator on the corresponding models. In addition, the accuracy of fit is also checked on the model.

The surface is then smoothed using various rubber polishing tools.

Try-ins made from V-Print Try-In following polishing on the polishing machine using pumice and high-lustre paste – ready for insertion!

Production of the denture base via 3D printing process with V-Print dentbase

A perfectly fitting and aesthetically pleasing denture is not only indispensable for optimal masticatory function and normal speech – it often also gives the patient a completely new quality of life. The 3D printing material **V-Print dentbase** allows the production of optimally precise denture bases for removable dentures. Unlike conventional production, additive production does not involve shrinkage and so patients and dentists alike benefit from an accurately fitting result. As a consequence, there are fewer pressure spots and fewer check-ups are required, relieving the burden on both the patient and the dentist. V-Print dentbase is also compatible with all conventionally available lining materials. The material's shade supports natural aesthetics. For further optimisations, the base can also be customised and characterised with composites.



3D-printed denture base made from V-Print dentbase.

Support structures can be removed quickly and easily by hand without the use of tools (design possible with SolFlex 3D printers).

Note

Please observe and follow the steps regarding post-processing of 3D-printed objects on page 18.

After removing the support structures, grind the support structure attachment points. It is also possible to make design corrections using a cross-cut carbide bur, for example.

The surface is then smoothed using various rubber polishing tools.

Problem areas on the adhesion surfaces must be identified and removed prior to the polishing. Any support structures and support structure attachment points must be ground away carefully.

Note
An initial check of the accuracy of fit of the denture base/teeth should be performed at this time.

Polishing of the denture base prior to luting in place simplifies the subsequent finishing process. Polishing is not necessary as the aim is to customise the denture base with composites.

Note
The adhesion surfaces are not polished.

High-lustre polishing with goat's hair brush

and cotton wobble.

Finished denture bases.

Tip

For a highly aesthetic restoration, V-Print dentbase can be customised, characterised or repaired at any time using a composite. Roughen the surface via grinding or sandblasting (Al_2O_3 50-110 µm, 1-2 bar). Then clean and dry the surface thoroughly. Apply a suitable adhesive system in accordance with the instructions for use. Observe and follow the instructions for use for the respective customisation systems.

Alternative: Production of the denture base using the CAD/CAM milling process with CediTEC DB

If the system is to be used exclusively by CAD/CAM milling, we recommend the use of a wax disc for the fabrication of try-in dentures.

CediTEC DB is an already cured PMMA in 98 mm disc shape and 30 mm in height. The material scores with high impact resistance and strength, so that the patient benefits from long-term, comfortable wear. Other clinical factors, such as plaque deposits or a tendency to discolour, are also reduced to a minimum with CediTEC DB, meaning that high-quality prostheses made using the CediTEC system lead to a high level of patient satisfaction and make the fabrication process much easier for the dental technician. The finished milled base can then be easily polished, resulting in a natural shine. Further individualisation is also possible. For this purpose, the surface is briefly roughened and then coated with an adhesive before further adjustments can be made with suitable materials.

Milled upper jaw denture base in disc holder (here vhf). Milling must be carried out with a milling strategy adapted to PMMA or milling parameters for CediTEC DB.
Only use one-edged milling tools in the milling machine or wet grinding procedures!

Detachment of milled denture base with suitable tools such as carbide burs.

Grind the bars with carbide cutters with FSQ toothing or black-ring cutters for titanium

and then smooth with a rubber polisher.

Polishing with pumice stone and cotton wobble
and/or polishing paste

Denture bases made of CediTEC DB already luted with denture teeth made of CediTEC DT (p. 12)

(at the bottom – without individualisation,
on the top – with individualisation)

Tipp

For a highly aesthetic restoration, CediTEC DB can be customised, characterised or repaired at any time using a composite. Roughen the surface via grinding or sandblasting (Al_2O_3 50-125 µm, 1-2 bar). Then clean and dry the surface thoroughly. Apply a suitable adhesive system in accordance with the instructions for use. Observe and follow the instructions for use for the respective customisation systems.

Production of the denture teeth made from CediTEC DT

CediTEC DT is a blank for the production of highly aesthetic permanent denture teeth for removable dentures. CediTEC DT contains 27% by weight inorganic fillers in a polymer matrix. Thanks to the composite technology, the material displays high abrasion resistance as well as high fracture resistance. CediTEC DT is suitable for both dry and wet processing. Select the corresponding blank size and the grinding/milling parameters for CediTEC DT for the designed restoration. When doing so, pay attention to the software settings of the respective CAD/CAM systems. “Diamond-coated tools” and composite parameters are recommended for the CAM processing. If the grinding/milling parameters are not already available in the CAD/CAM systems’ software settings, they will need to be added before you proceed. Please contact the CAD/CAM system provider for assistance. The instructions for use from the manufacturers must be observed and followed.

Milled dental arches in disc holder (here vhf).

Note
Ensure a tension-free fit of all segments

Detachment of milled dental arches with suitable tools such as carbide burs.

Tip
Taper bars first before disconnecting them. This creates predetermined breaking points and the object can be removed without exerting practically any force.

Grind the bars with fine-toothed carbide burs or fine diamond tools

and then smooth with a rubber polisher.

Recommendation: CediTEC DT can be polished using a composite polishing paste in combination with goat's hair brushes and cotton/ leather wobbles.

Note
Polishing is only practical here if the teeth are not going to be customised with composite.

Tip
For a highly aesthetic restoration, CediTEC DT can be customised, characterised or repaired at any time using a composite. Roughen the surface via grinding or sandblasting (Al_2O_3 50-110 µm, 1-2 bar). Then clean and dry the surface thoroughly. Apply a suitable adhesive system in accordance with the instructions for use. Observe and follow the instructions for use for the respective customisation systems.

Luting of the denture teeth to the denture base

Denture base and teeth directly after production.

Checking the accuracy of fit between the denture bases. Correct any occlusal interferences directly on the teeth.

Check the accuracy of fit of the denture teeth and/or tooth sections before luting them. Correct any occlusal interferences directly on the teeth.

Note
Ensure that none of the segments are tensioned.

Example procedure for luting of the denture teeth to the denture base:

Creation of a transfer key with the help of the try-ins and a precision impression material (here: V-Posil Putty fast). Raise the bite by at least 5 mm in the articulator in advance.

Roughen the adhesion surface on the denture base and dental arch with aluminium oxide (50-110 µm, 1-2 bar). Remove abrasive material residues carefully with an ultrasound bath, steam cleaner and oil-free compressed air.

CediTEC is a luting system for the permanent luting of methacrylate-based denture teeth on methacrylate-based denture bases.
The CediTEC Adhesive cartridge mixes the paste automatically without producing any errors or bubbles. The system comprises CediTEC Adhesive (cartridge) and CediTEC Primer.

Insert the CediTEC Adhesive cartridge in the VOCO dispenser (type 2) or a similar mixing gun with a suitable plunger. For technical reasons there may be slight differences in the fill levels of both cartridges chambers. You should therefore remove the cartridge cap and continue to press out the material until an equal amount has been ejected from both outlets.

Then attach a mixing tip (type 20) and lock in place with a 90° turn.

Pour a few drops of CediTEC Primer onto a mixing tray. The bottle must be resealed immediately after use.

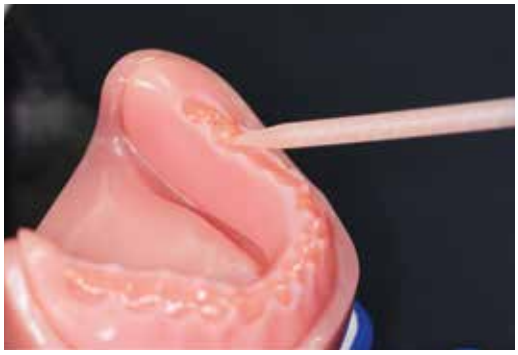
Apply the primer to the adhesive surfaces of the cavities and allow to dry for 30 seconds.

Note
To ensure the bonding of the luting material on the external surfaces, apply primer generously and also on the outside of the cavity.

Apply the primer to the adhesive surfaces of the teeth and allow to dry for 30 seconds.

Lower jaw: Roughened dental arch inserted and fixed in position with adhesive wax, etc., if necessary.

Note
Apply primer generously.



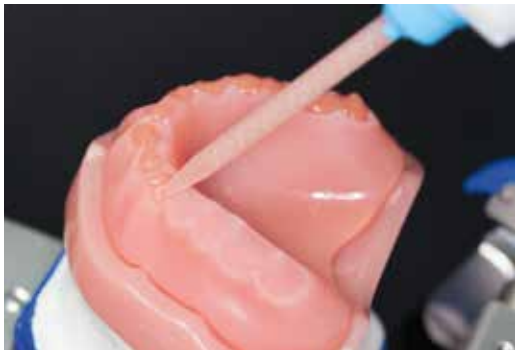
Apply CediTEC Adhesive to the tooth cavities and insert individual teeth and/or tooth sections directly. The quantity of luting agent is dependent upon the size of the cavities.

Closing of the articulator and uniting of the teeth and base.

Large quantities of excess material should be removed directly using a suitable instrument.

Note
The working time as of the application is 4 minutes (at 23°C).

Same procedure as for lower jaw with CediTEC Primer being applied to the adhesion surfaces of both the teeth and the base.



Application of CediTEC Adhesive.

Uniting of teeth and base in articulator.

Removal of large quantities of excess material.

To achieve an optimal adhesive bond, the polymerisation must occur in the pressure pot immediately after insertion of the teeth or removal of the excess material.

Curing time: 15 minutes
Water temperature: 50°C
Pressure: 2-6 bar

Checking the accuracy of fit using articulating paper.

Grinding of early contacts.

Following polymerisation, remove large quantities of excess material with fine-cut metal burs. Then use finishing diamonds and flexible polishing discs, for example, to sculpt the sulcus (sulcus gingivae – area between the tooth neck and the gum) and the interdental spaces. Polished areas are not included in the processing.

Polishing with goat's hair brushes.

High-lustre polishing with cotton wobble or on polishing machine.

Result without customisation.

The denture was customised as an example.

Post-processing of 3D-printed objects made from V-Print Try-In and V-Print dentbase

1 **Cleaning:**

For cleaning purposes, we recommend the use of isopropanol (purity ≥ 98%) as a cleaning solution, in a cleaning device. An unheated ultrasonic bath or stirring bath may be used as cleaning devices. The printed objects must be cleaned in two, or optionally in three steps. Position the unclean printed objects inside the cleaning bath so that any openings point downwards. Use tweezers or suitable submersible baskets to fill the baths. Please ensure that the printed objects do not come into contact with one another during cleaning.

*Note: The bath's cleaning efficacy decreases with increased use. When the cleaning efficacy decreases, the respective bath must be replaced. Resin residue on the surface can indicate that the cleaning efficacy of the bath is too low. Next, the printed objects must be dried carefully using compressed air. If there is any resin residue on the printed object after the final cleaning, or if residue escapes from the undercuts when drying, the printed object can be briefly immersed once again in the final cleaning bath. Next, repeat the drying process.

2 **Preparation for post-exposure:**

Obstructive support structures can be removed before the post-exposure process, carefully and without exerting pressure, using a rotary instrument and as close to the printed object as possible. Use a suction device. Carefully remove any remaining plastic dust using compressed air. Then, rinse the printed objects with fresh isopropanol for a few seconds. Carefully dry the printed objects once again with compressed air.

3 **Post-exposure:**

Conduct the post-exposure a minimum of 15 minutes after the most recent contact with isopropanol. A protective gas atmosphere is not required. It is important to ensure that the printed objects do not overlap or contact each other, as post-curing would be negatively affected by the shadows that are cast. Post-exposure can be conducted using different devices, for example:

Otoflash[2]:

Further possible devices for cleaning and post exposure can be found on the VOCO homepage under the documents for V-Print dentbase.

[2] Or a similar device. If necessary, please consult your device manufacturer

Product overview

V-Print® Try-In

Light-curing resin for the generative production of try-ins for prosthetics

Indications

Try-ins for total and partial prosthetics

Transfer and grinding templates

Correction impressions and occlusal impressions

Advantages

- Verification and possibility to assess the fit, occlusion, functionality, phonation and aesthetics **before** the production of prosthetics

V-Print® Try-In
REF 6049 Bottle 1000 g beige

VOCO TRUSTED PARTNER

All print partners can be found here
www.voco.dental/3dprintingpartners

V-Print® dentbase

Light-curing resin for the generative production of denture bases for removable dentures

Indications

Removable denture bases

Advantages

- Natural gingiva shade for ambitious aesthetics
- Precise and custom-fit for high wearing comfort
- Saves time during polishing – thanks to printed surface
- Universal – compatible with commercially available resin materials and composites
- High green strength for save removal from the building platform
- Biocompatible

V-Print® dentbase
REF 6048 Bottle 1000 g pink

VOCO TRUSTED PARTNER

All print partners can be found here
www.voco.dental/3dprintingpartners

CediTEC® DT *Denture Teeth*

CAD / CAM composite for denture teeth

Indications

Prosthetic teeth and tooth sections up to complete dental arches for removable dentures

Advantages

- Cured composite for high quality and durable denture teeth
- Translucent shade and high fluorescence for natural aesthetics
- Production of individual, accurately fitting denture teeth, reproducible at any time
- Effortless polishing for a natural gloss
- Easy to individualize without using an MMA primer

4 shades

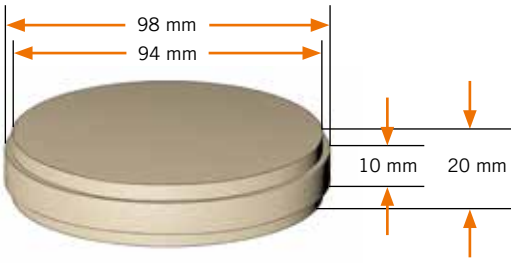
CAD / CAM

CediTEC® DT

Shade	1 × 20 mm, ø 98 mm
A1	REF 6085
A2	REF 6086
A3	REF 6087
BL	REF 6088

VOCO TRUSTED PARTNER

The list of devices is continually extended and can be found at **www.voco.dental/devicesceditecdt**



CediTEC® *Adhesive*

Luting system for denture teeth in denture bases

Indications

Luting of prefabricated prosthetic teeth and CAD / CAM-produced individual teeth and tooth sections in CAD / CAM-produced denture bases

Luting of prosthetic teeth in the scope of a repair or extension

Advantages

- Error- and bubble-free mixing
- Only the material quantity actually required is mixed
- Easy and direct application
- Subsequent additions possible
- Also usable for other systems and conventional PMMA

auto mix

CediTEC® Adhesive

REF 6082	Set cartridge 80 g CediTEC Adhesive, bottle 4 ml CediTEC Primer, accessories
REF 2202	Mixing tips type 20, 50 pcs.
REF 2245	Easy Brush, application brushes, 50 pcs.

CediTEC® *Denture Base*

High-impact PMMA for the fabrication of denture bases for removable dentures

Indications

Fabrication of denture bases for removable dentures

Advantages

- PMMA with high impact resistance and strength for a long time wearing period
- High-quality denture bases, reproducible at any time
- Three shades for an aesthetic result
- Very good polishability – individualisations possible at any time

3 shades

CAD / CAM

CediTEC® DB

Shade	1 × 30 mm, ø 98 mm
pink	REF 6195
dark-pink	REF 6196
orange-pink	REF 6197

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