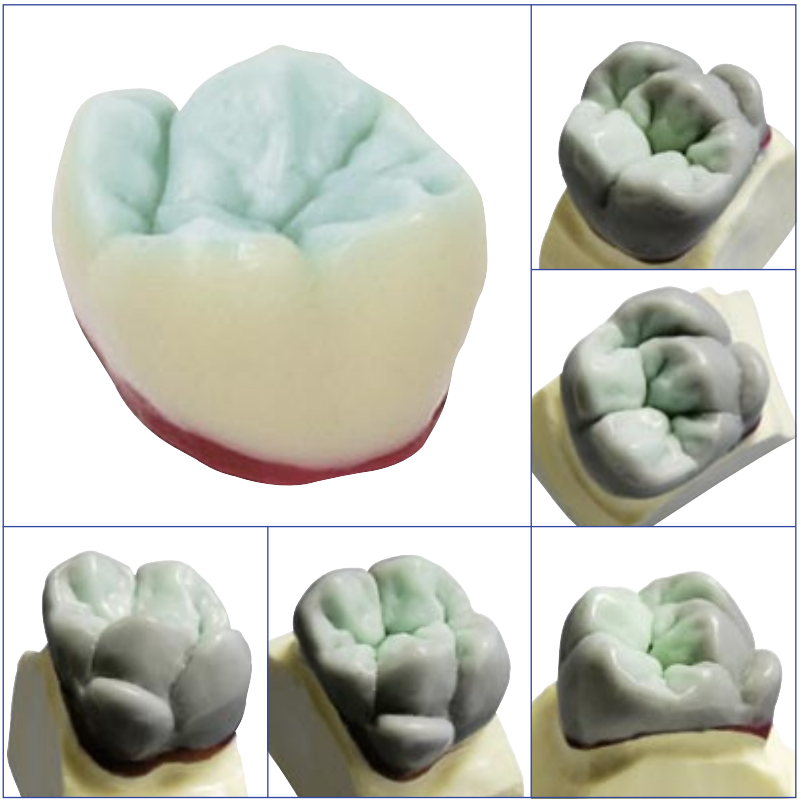


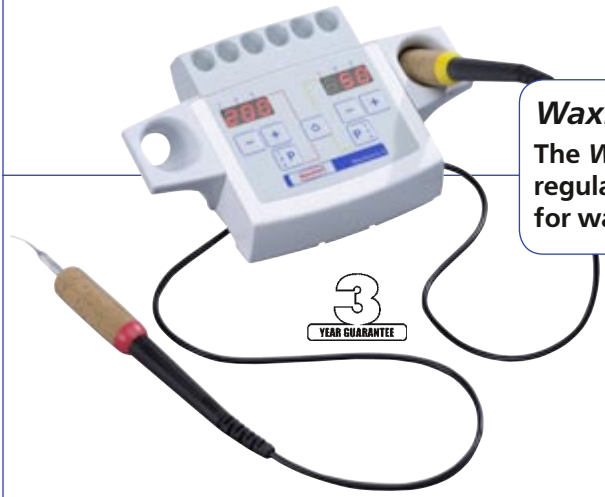
Waxing up

Crown and bridgework

Friedrich Jetter
Christian Pilz

Renfert
Ideas for dental technology

Waxing-up units



Waxlectric II

The *Waxlectric II* is an electrically regulated sculpting instrument for waxing up.

Vario E

The *Vario E* preheats sculpting waxes to an optimum working temperature.

hotty LED

The *hotty LED* is a wax-dipping unit with controlled temperature settings.

Advantages of the electric wax-up technique:

As the sculpting tips are preheated, they do not have to be heated in the flame first. This reduces the total waxing-up time by as much as 20%. The technician does not have to use a Bunsen burner and can therefore concentrate fully on the wax-up.

With electrical waxing-up the sculpting wax is not overheated, which prevents excessive contraction of the wax. Even the most intricate occlusal sections can be contoured with a high degree of precision.

Advantages of the electric wax heater:

The preheated wax eliminates the need to melt cold wax with the waxing instruments. This can reduce the waxing-up time by as much as 30%.

If the electric wax heater is used in combination with the *Waxlectric* electric wax knife, the total waxing-up time can even be reduced by as much as 50%.

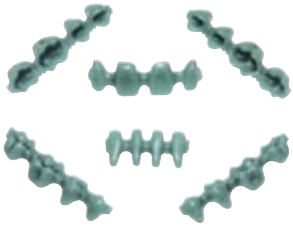
As the wax is gently heated to the ideal temperature, overheating is avoided.

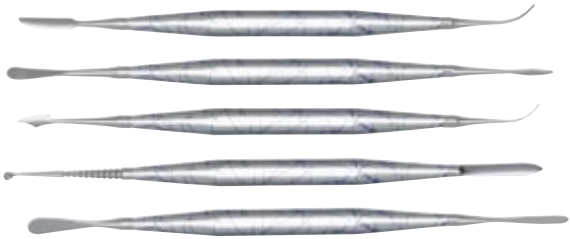
With the *Vario E* all three wax pots can be individually activated and regulated. The wax pots are deep enough for dipping wax-copings.

Advantages of the hotty LED:

Precise regulation of the temperature enables reproducible wax copings with a uniform, controlled thickness to be fabricated in a few seconds. Minimal fluctuations in temperature are corrected. The essential properties of the dipping wax are retained.

Instruments and materials





for the wax technique

Opus sculpting instruments:

Opus are multipurpose waxcarving instruments. A selection of eight interchangeable sculpting tips can be fitted to the universal handle, providing a suitable instrument for all types of wax-up.

Order no. 1165-0000
(Set of 4 instruments)

GEO-Dip:

Practical dipping wax pellets for use in electric dipping wax pots. This very high-quality, elastic wax ensures reproducible, accurately fitting precision copings with a uniform thickness.

Order no. 482-3000
(yellow, approx. 200 g)
Order no. 482-3200
(orange, approx. 200 g)
Order no. 482-3300
(green, approx. 200 g)

Liquicol:

This very thin special superglue seals and hardens the surface of dies, alveolar ridges and opposing models.

Order no. 1732-0020
(2 x 20 g)

Picosep:

Picosep is a low viscosity, silicone-based separating agent and is therefore ideal for the wax dipping technique.

Picosep separates plaster from wax and ensures precise, accurately fitting copings.

Order no. 1552-0030 (30 ml)

GEO-Pontics:

GEO prefabricated wax pontics are used to facilitate fabrication of porcelain-bonded anterior and posterior bridges. The pontics burn out without residue.

Order no. 500-0000
(Set of 10 blocks in 6 sizes)

GEO-Avantgarde:

Avantgarde sculpting waxes are specially designed for the electric wax-up technique and produce a precise wax-up.

Order no. 492-0300
(occlusal / mint, 75 g)
Order no. 495-0200
(universal / grey, 75 g)

ERGO Wax:

ERGO waxing-up instruments are multipurpose and can be ground to suit individual requirements. The handles are heat-resistant and thermally insulated.

These sculpting instruments feature a modern design. *ERGO Wax* instruments are suitable for CrCo work, full denture prosthetics and for preparing acrylics.

Order no. 1034-2000 (Set of 5 instruments)

GEO-Triangel:

GEO-Triangel prefabricated T-bars save time when sprueing the wax pattern. Bridges no longer distort after being sprued.

Order no. 680-3000
(approx. 100 sprues)

GEO-Anatomics:

These preformed occlusal wax patterns for the upper and lower posterior teeth reproduce the occlusal contour of natural teeth exactly. Their wide range of application saves time when waxing up.

Order no. 504-0000
(Set of 15 patterns in 4 sizes)

Die spacer:

Die spacer produces a space between the prepared tooth and crown to allow for the cement.

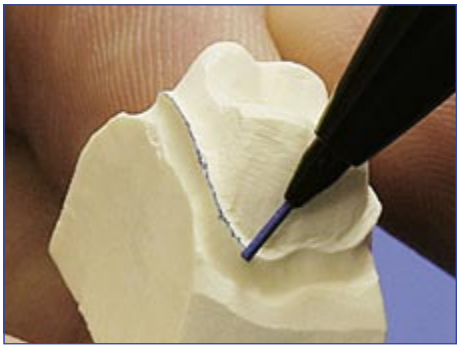
Order no. 1954-0500
(Pico-Fit gold, 15 ml)
Order no. 1954-0600
(Pico-Fit silver, 15 ml)
Order no. 1955-0100
(Dura-Fit transparent, 15 ml)
Order no. 1944-0100
(Luxo-Fit light-curing, 25 ml)

1

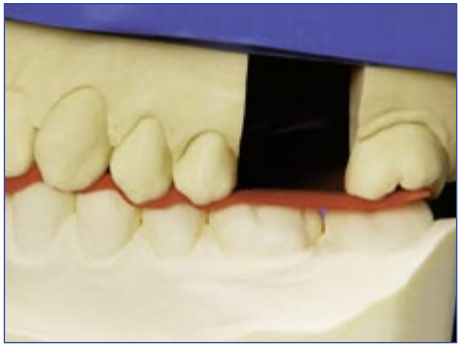
Sectioned die

Initial status:
Full crown on tooth 26.

Prepared die for tooth 26.



The preparation margin is marked using a graphite-free pencil.



Centric occlusion contact areas are checked in the articulator using occlusal foil.

High spots are clearly marked ...

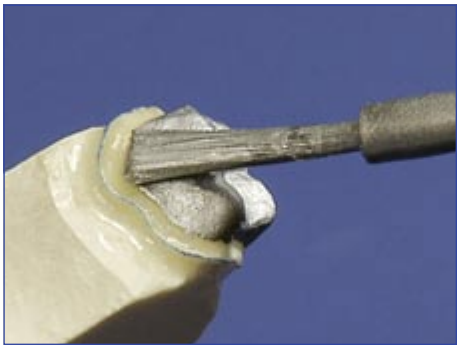
... and must be reduced before fabricating the crown.

Note:
All opposing teeth should be in contact if possible.

Apply *Liquicol* with the applicator supplied ...

1

... to seal the die and harden the preparation margin.



Next apply *Pico-Fit* silver die spacer and allow it to dry.

Note:
Apply to within 1 mm of the preparation margin.

Then apply a coat of *Pico-Fit* gold die spacer.

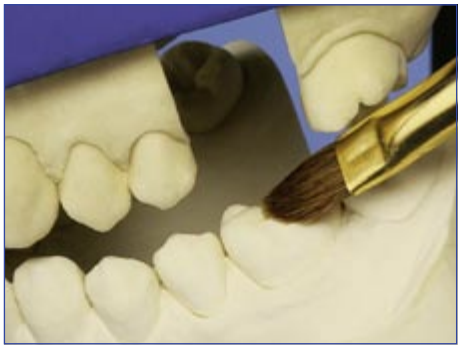
Function:
Any high spots become visible where the gold die spacer has been scraped off without damaging the die.

Result: The prepared die.

Then dip the applicator brush in *Picosep* and scrape off any excess on the edge of the jar.

Wipe the brush on a paper towel tissue paper to attain the optimum amount of separating agent.

Apply a thin coat of separating agent over the whole die to below the preparation margin.



Also apply separating agent to the adjacent teeth and the opposing teeth.

2 Dipping

First add *GEO-Dip* to the *hotty LED* and completely melt it using a recommended temperature setting of 89 - 91ºC (192 - 196ºF).

Support your hand with your little finger.

Then **turning the die quickly** (from the approximal with premolars and molars) ...

... dip it to below the preparation margin.

Remove the die **slowly** and **uniformly** by turning it again in the same direction ...

... and hold it briefly just before withdrawing the die tip to allow any excess wax to drip off.

Result:
An accurately fitting coping with uniform thickness.

Note:
If necessary, add sculpting wax to any thin areas.

Crown wax-up

3

The mesiobuccal cusp cone is waxed up first using the thick or medium tip.

Then the distobuccal cusp cone is waxed up.

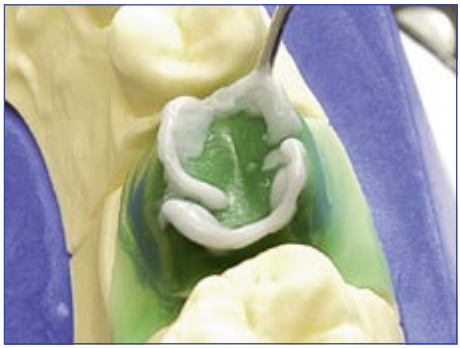
The pattern is checked in the articulator for any balanced contact.
The interocclusal space is also checked and adjusted if necessary.

The marginal ridge of the buccal cusps is added.

Waxing up the palatal working cusps.

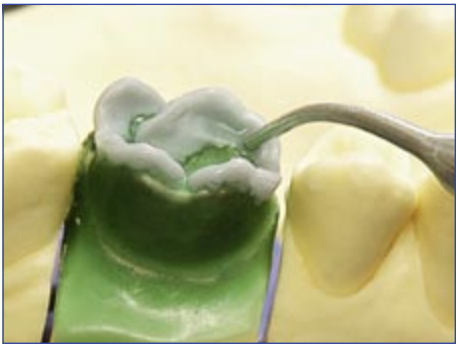
Note:
The positions of the cone tips are determined by the functional movements of the mandible and the occlusal support required.

Checking the interdigitation – palatal view.



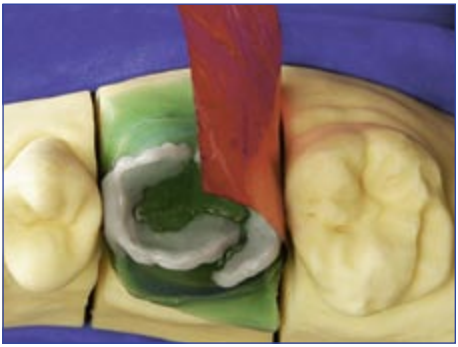
The mesial and distal marginal ridges are added.

3



Waxing up the marginal ridges from the occlusal aspect.

The distal surface is built up and a convex contact area created.

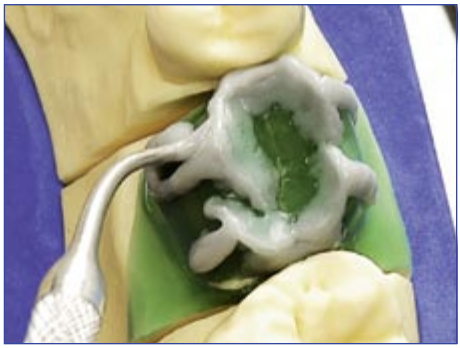


The mesial contact area is concave. The contact areas are then checked with articulating paper.

Checking the mediotrusion – buccal view.

Checking the laterotrusion – buccal view.

Next the contours of both the buccal ...

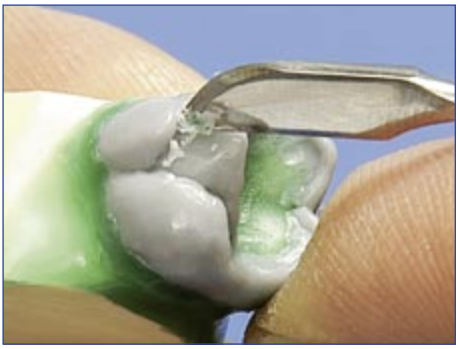


... and palatal cusps are waxed up.

The remaining outer contours are then added and shaped.

3

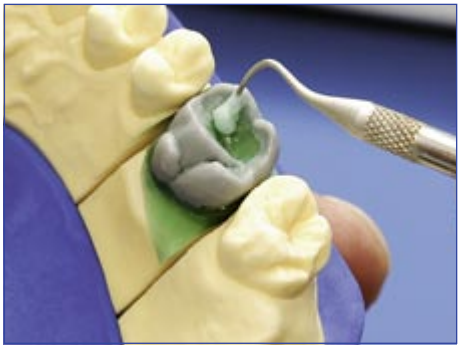
The buccal and ...



... palatal outer contours are adjusted and precisely shaped using the *Opus* blade.

The wax surfaces are cleaned and smoothed using the *Opus* wax brush.

Completed wax-up of the outer contour – occlusal view.



The triangular ridge of the mesiobuccal cusp is waxed up first using the angled small or mini tip.

Checking with occlusal foil, ...

... which marks the initial contact by the mesiobuccal cusp slope.

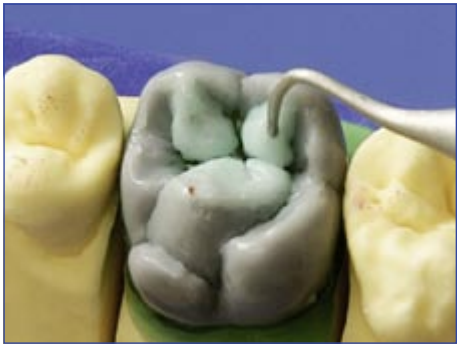
Note:
The contact area is marked by the distobuccal cusp of the lower tooth.

The mesiopalatal cusp has a triangular ridge which descends directly into the central fossa.

3

The sharply defined distal ridge merges into the transverse ridge.

Below the mesiopalatal cusp tip there is another high spot, which is reduced slightly using a small wax carver.



The triangular ridge is added to the distobuccal cusp from the tip of the cone to the transversal ridge.

After checking with occlusal foil ...

... the extension in the lower area of the triangular ridge is clearly visible.

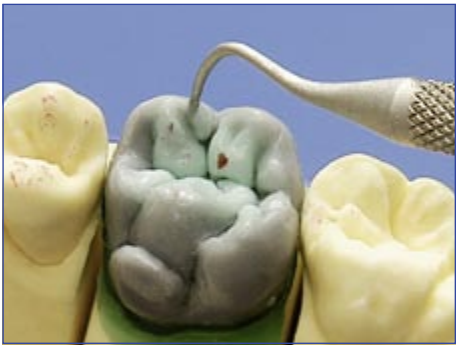
A clearly defined secondary ridge completes the distobuccal cusp.

A small slope is extended from the cusp tip of the distobuccal cusp.

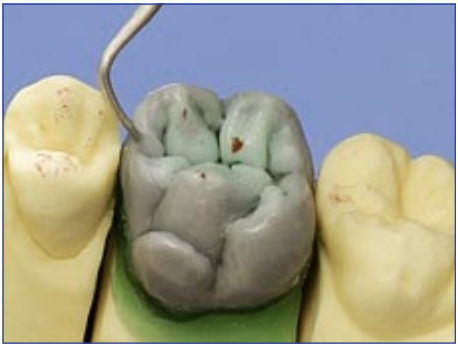
A secondary ridge is then extended into the approximal space at tooth 27.
There will also be a contact area on this marginal ridge with the approximal ridges of teeth 36 and 37.

3

The mesial secondary ridge of the mesiopalatal cusp is waxed up.



The distal secondary ridge on the mesiobuccal cusp is now also waxed up ...



... and completed by the mesial marginal ridge.

Result:
The completed crown wax-up with all the contact areas.

Then the excess dipping wax is cut and removed.

Shortening the cervical margin with a universal instrument.

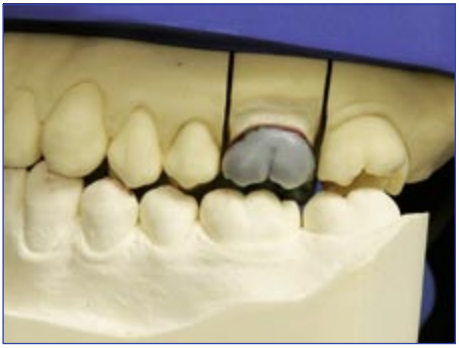
Note:
Approx. 1 mm above the preparation margin.

Cervical wax is added around the crown margin.

Excess wax is removed from the cervical margin using the *Opus* blade.

3

The margin is adapted and smoothed with a lightly heated *Opus* beavertail instrument.



The laterotrusion and ...

... mediotrusion are given a final check.

The reservoir sprue is attached with sticky wax and then wax is added to smooth the junction.

GEO-Waxfinish is used ...

... to attain a uniform, smooth surface. This facilitates subsequent preparation.

Result:
Completed crown wax-up (1).

Completed crown wax-up (2).

Bridge wax-up

4

Initial status:
Bridge spanning 23 – 26.

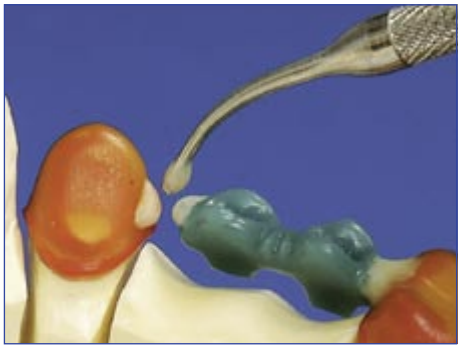
Articulated models – checking the interocclusal space.

Prepared dipped copings.

After sealing with *Liquicol*, separating agent is applied thinly to the pontic area using the *Iso-Stift*.

Bridge units 24-25 are separated from the block using a universal instrument.

The pontics are attached both distally ...



... and mesially (e.g. with *GEO-Avantgarde* universal wax).

4

After checking the interdigitation and interocclusal space in the articulator, wax is added to smooth the connectors.

Wax is added to incomplete areas at the cusp tips, ...

... basal areas ...

... and copings ...

... or reduced as required.

Checking in the articulator ensures the porcelain will have a uniform thickness.

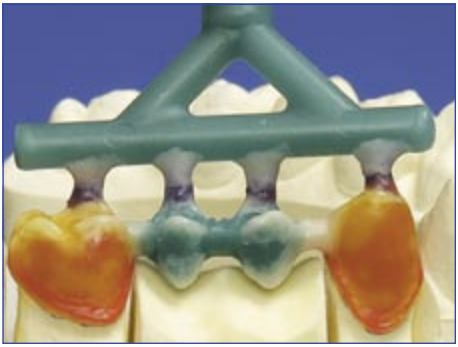
The sprues (2.5 - 3 mm) are now attached and smoothed with wax.

Note:
The precise fit of the wax pattern should be checked before attaching the T-bar (separate again if necessary).

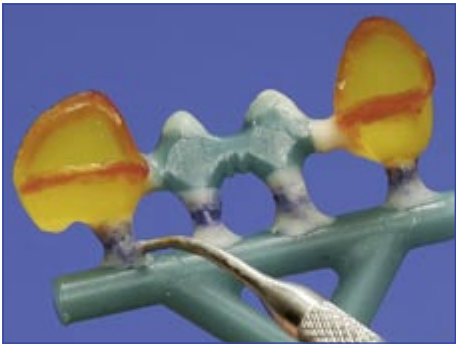
The *GEO-Triangel* T-bar is reduced to the length of the bridge ...

4

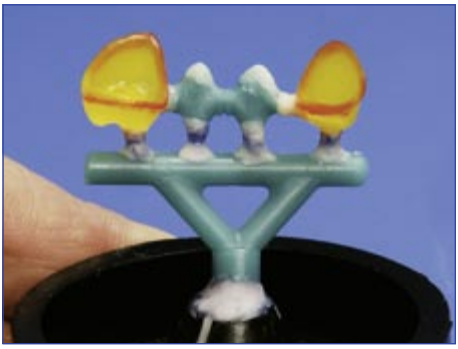
... and waxed onto the feeder sprues.



Result: A sprued, stable bridge.



After removing the pattern, the remaining inaccessible areas are smoothed with wax.



Correctly positioned bridge on the sprue former – ready for investing.

Preformed occlusal wax patterns

Prepared bridge spanning 44 - 47. Teeth 44 and 45 are to be bonded with porcelain. Tooth 46 is to be a full pontic and tooth 47 a full crown.

The *GEO-Anatomics* wax occlusal patterns 46 - 47 are separated from the block using a lightly heated universal instrument.

These are positioned precisely and waxed in place.

The pontic is fully waxed up basally to provide a tangential contact area on the alveolar ridge.

Note:
The pontic is reduced so much lingually that there is only point or linear contact in the vestibular region.

Both the tangential basal contact ...

... and occlusion are then checked with articulating paper.

Connecting the individual bridge units.

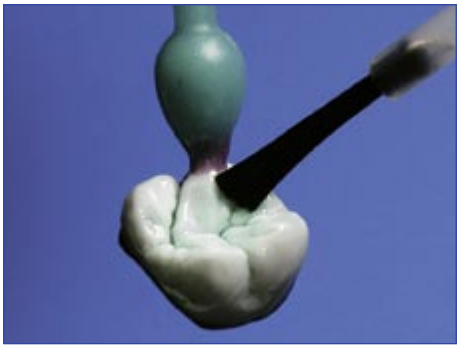
High spots are reduced using the small *Opus* round carver.

Missing contact areas are waxed up with sculpting wax until the occlusion is uniform.

Checking the interdigitation and lateral movements.

Result: Completed bridge wax-up with all the contact areas.

Waxing up step by step



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Renfert GmbH / Industriegebiet / 78247 Hilzingen / Germany
or: Postfach 1109 / 78245 Hilzingen / Germany
Tel.: +49 (0)7731 8208-0 / Fax: 8208-70 / www.renfert.com / info@renfert.com

USA/Kanada:
Renfert USA / 3718 Illinois Avenue / St. Charles IL 60174 / USA
Tel.: 630 762 1803 / Fax: 630 762 9787 / www.renfert.com / richard@renfertusa.com
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