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OVC3™

One Visit Crown

Semi-Indirect Procedure
New Users

RHONDIUM™

INSTRUCTIONS FOR USE

SEMI-INDIRECT PROCEDURE

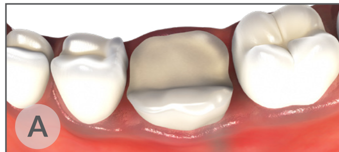
There are two ways to complete an OVC_3 restoration; the *semi-indirect* procedure and the *direct* procedure.

For new users we recommend using the *semi-indirect* procedure. For experienced users we recommend either procedure. See the reverse of this booklet for instructions on the *direct* procedure.

1. Prep and measure the tooth

Clinical Tip: *Check the bite with occlusal paper while the local anaesthetic is taking effect. Then reduce any obvious opposing cusps that might cause occlusal interference.*

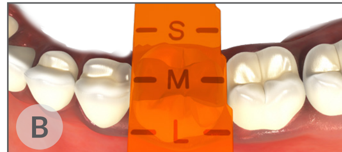
Prepare the tooth using minimally invasive principles, allowing at least 1mm of clearance in the central fossa and 1.5mm at the cusps and marginal ridges. Avoid all undercuts **(Figure A).**



Clinical Tip: *Add pronounced bevelled margins for better bonding, shade blending, easier matrix application and easier identification of the crown margins. Ensure the contact points are broken.*

Very deep defects can be built up using the green or blue OVC wedges, within 2-3 mm of the occlusal plane. This will help with the retention of the McDonald Matrix Band™.

Measure the mesial-distal distance of the affected tooth using the Selector Key to confirm the OVC_3 size needed, select the smaller size if in doubt **(Figure B).**

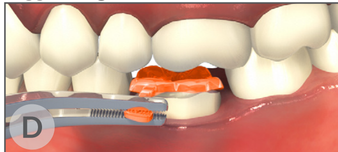


Clinical Tip: *It is more accurate to measure the mesial-distal distance*

once the tooth is reduced and the contacts are removed. Another option is to take a bite registration impression at initial consult and use a Selector Key to measure the impression.

Open the selected OVC_3 case **(Figure C).**

Hold the Replica handle using tweezers and place on the prep to confirm its M-D fit over the prep. Ask the patient to gently bite down with Replica in place. Ensure there is adequate occlusal clearance – the Replica should have sufficient space to move when the handle is gently tugged **(Figure D).**



Also check the Replica has not been tilted due to an opposing cusp – adjust opposing dentition if required.

Clinical Tip: *Spray the underside of the Replica with an occlusal spray to identify where further reduction of the prep is needed after the patient bites down (Bausch Arti-Spray® Occlusion-Spray).*

2. Place McDonald Matrix Band™

Carefully place the McDonald Matrix Band™ as shown. The matrix band is then tightened by turning the screw clockwise with the supplied Hex Stick **(Figure E).**

The McDonald Matrix Band™ can be unscrewed and re-tightened if adjustments are necessary.

Ideally the McDonald Matrix Band™ can be tightened enough to seal the cavity margins without using a

wedge. If the margins are not 100% sealed then use a Stretch Wedge™, or other wedge as appropriate.

Clinical Tip: *Occasionally, the band does not reach the neighbouring tooth's contact point. Cutting a "dress-maker's dart" in the band with scissors or high-speed hand-piece can assist with flaring the band* ***(Figure F)****.*

Lightly burnish the contact points to ensure the matrix band is touching the neighbouring teeth.

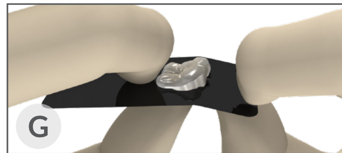
If a build up is necessary, bond the prep, add composite and cure.

Apply a thin layer of separating agent to the tooth prep (Rubber Sep or Pro-V Coat Bisco®) and gently air-dry with triple syringe. Rubber Sep is recommended but is contraindicated when latex allergy is present.

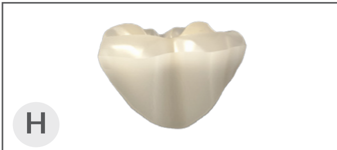
IMPORTANT IF USING PRO-V COAT: If you have used bonding agent to do a build-up, you need to thoroughly remove any oxygen inhibited resin layer by either light-curing through the separating agent or by scrubbing the surface with alcohol and a micro brush. Inadequate removal may result in difficulty removing the OVC_3. Placing a double layer of separating agent may also aid easier removal.

3. Prepare and press the OVC_3 onto the tooth prep

Wearing clean gloves, remove the OVC_3 from the packaging by fully inverting the black film (**Figure G**).

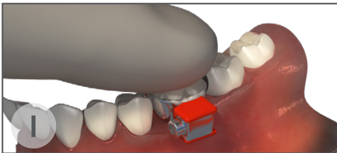


Use your fingers to form the uncured sub-layer of the OVC_3 into a rounded cone-shape **(Figure H).**

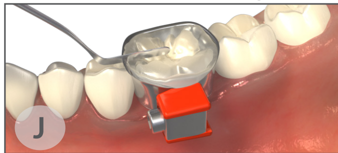


If the uncured sub-layer slightly separates from the occlusal layer, simply press it back into position.

Press the OVC_3 onto the prep **(Figure I)**.



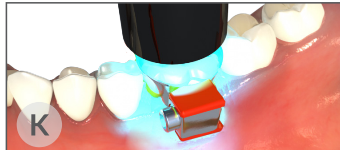
Use a flat-plastic instrument to horizontally align the OVC_3 fissures with neighbouring teeth **(Figure J)**.



Clinical Tip: *Some clinicians prefer to get the patient to GENTLY close into centric occlusal to set the occlusal height.*

When you are happy with the position of the OVC_3, remove excess material around the periphery with a fine carving instrument and then light-cure the occlusal surface for at least 30 seconds*. **(Figure K).**

**Based on a 1,000 mW/cm² curing light*

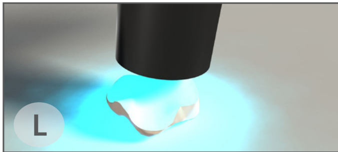


Clinical Tip: *Deliberately leaving a ledge on the buccal side helps removal of the OVC_3.*

4. Remove the OVC_3 and the separating agent

Loosen the McDonald Matrix Band and remove the OVC_3 and band together with either a strong hand-instrument or some forceps. Crown-removal forceps, sturdy hemostats or even lower root forceps work well. Before touching

the intaglio surface of the crown, light-cure it immediately after removal to ensure that it is fully cured **(Figure L)**.

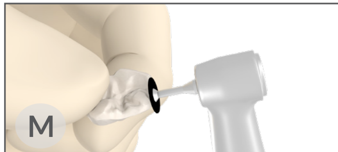


IMPORTANT: The separating agent must be entirely removed from the OVC_3 and the tooth preparation.
If using Rubber Sep, peel off the rubber.
If using Pro-V Coat then take extra care to remove all the Pro-V Coat. Air abrasion is effective. If this is not available, thoroughly clean the surface with pumice and a prophy brush. Isopropyl alcohol can also be used to remove the Pro V Coat.

Remember to clean the proximal surfaces.

5. Trim and polish the OVC_3

Use your preferred method to trim and remove excess material from the OVC_3 **(Figure M).**



We recommend partially trimming the buccal surface, and doing the final contouring after the OVC_3 is bonded in place. The lingual and proximal surfaces usually only need minimal rounding and polishing.

To form tight contacts, apply a resin bonding agent of your choice to the proximal surfaces, air thin and light-cure. The matrix band is only 30 microns and therefore only a very thin additional layer of resin is required.

There are two ways to do this:

A. Use a thick bonding agent such as Optibond FL or Optibond XTR which creates a sufficiently thick layer by itself. After light-curing, wipe away the oxygen inhibited layer.

B. Use a thin bonding agent, air-dry and cure. Then paint a thin layer of flowable onto the proximal surfaces, air blow to spread the flowable and light-cure.

Clinical Tip: *Use a low viscosity flowable as thixotropic flowable resins can be too thick for this application.*

Polish and trim the OVC_3 until you are satisfied.

Warning: Any contamination of the intaglio surface with bonding or flowable resin may affect the crown fit.

6. Cement the OVC_3 in place

Try-in the OVC_3 to confirm tight contact points and good fit then cement as usual.

Use dual-cure resin-based luting cement to bond the OVC_3 crown in place.

DO NOT use self-etching GIC-type cements as these do not bond with sufficient strength.

Recommended dual-cure luting cements include Panavia 5 (Kuraray), Multilink II (Ivoclar), RelyX Ultimate (3M).

Clinical Tip: *Use the included Green OVC Wedges when cementing the OVC_3 to quicken the clean-up of the luting cement.*

CLEANING

- Selector Keys, OVC Wedges, Stretch Wedges™, McDonald Matrix Band™, Hex Stick and Replicas are single use only.

POST-OPERATIVE

As with standard dental treatment, advise patient to return if there is any discomfort or a problem with the restoration is experienced.

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Prinsessegracht 20
2514 AP The Hague
The Netherlands

STORAGE

Store the OVC_3 at 1°C to 25°C (34°F to 77°F). When not in use, keep containers closed, protect contents from moisture and contaminants.

Accessory items to be stored according to manufacturers' label instructions.

See Instructions for Use

Dentist Use Only

Single Use Only

Use by

For more information please contact:

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Manufactured by:
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Katikati 3129
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Pat Pending, US9629693

Federal (USA) law restricts this device to sale by or on order of a licensed dentist.

INTRODUCTION

To gain maximum satisfaction and benefit from these products, carefully read the OVC_3 Procedure for detailed step-by-step instructions. The OVC_3 Instructions for Use/Procedure Manual is available from Rhondium Ltd at the address shown at the end of this document and on the Rhondium website.

INDICATIONS FOR USE

The Rhondium OVC_3 is intended for restoration of permanent teeth with a single unit crown.

The OVC_3 Hybrid restoration procedure is a chairside, one visit procedure to restore structurally compromised posterior teeth in need of full coverage. It is indicated for cases normally restored with an onlay or a partial crown. It can also be used to increase the vertical dimension by building up the posterior teeth.

CONTRAINDICATIONS

- The OVC_3 Hybrid direct clinical procedure requires that the McDonald Matrix Band™ can be held in a stable position and if this is not possible the OVC_3 is contraindicated. A build-up with the OVC Wedge can help with the matrix band stability.
- It is contraindicated to place the OVC_3 Hybrid on an old composite margin.

PRECAUTIONS AND WARNINGS

1. Carefully read and understand all instructions before use.
2. For use on permanent teeth only.
3. Use of blue light protective eyewear by clinicians and patients throughout the procedure is recommended.
4. Follow manufacturers' recommendations for all materials used during the procedure.
5. Patients with bruxism must follow preventative treatment such as the wearing of night splints.
6. The clinician's decision to restore a tooth using the Rhondium OVC^3 should be based upon the optimal clinical needs of the patient.

A professional assessment of oral health, chewing habits, and patient concerns should be factored into the decision.

7. Proper adaptation of the margin is needed for optimal marginal integrity. Adaptation and smooth finishing of the crown margin (buccal, lingual, interproximal) are needed to reduce the likelihood of leakage and gingival tissue irritation.
8. Finish and polish steps help to maintain shine and stain resistance.
9. If a crown margin is not properly adapted to the tooth preparation, the integrity of the margin may not be comparable to margins produced using a well executed traditional fabrication technique.
10. Continue to monitor crown margins during routine check-ups.

PRODUCT PRESENTATION

The OVC_3 Hybrid is provided in an **OVC_3 Hybrid Refill Pack.**

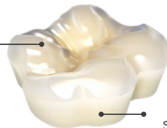
An OVC_3 Hybrid Refill Pack consists of:

- 1 OVC_3 Hybrid in the selected size
- 2 McDonald Matrix Bands™
- 2 Stretch Wedges
- 1 Replica in corresponding size
- 2 OVC Wedges
- 1 Selector Key
- 1 Hex Stick
- 1 IFU QR Card

An OVC_3 Hybrid Refill Pack is available individually or as part of a Kit, where a Kit contains a selection of tooth types and sizes.

DESCRIPTION OF COMPONENTS

OVC_3



The OVC_3 is a hybrid ceramic crown made of two parts. A cured anatomical occlusal layer and an uncured sub-layer that allows customization of the OVC_3 to the tooth preparation.

The anatomy of each OVC_3 type is common to two teeth, the first and second of each tooth group. For example, OVC_3 4/5(US) 15/14(FDI) can be used to restore a first or second upper right premolar.

Available OVC_3 tooth types:

Tooth Group		OVC_3 Hybrid Type (Tooth Number) US	FDI
Upper Premolar	UPM	4/5 12/13	14/15 24/25
Upper Molar	UM	2/3 14/15	16/17 26/27
Lower Premolar	LPM	20/21 28/29	34/35 44/45
Lower Molar	LM	18/19 30/31	36/37 46/47

Each tooth type is available in:

- Shades **A2 HT** and **A3 HT** (High Translucency)
- Five different sizes - **XS S M L XL**

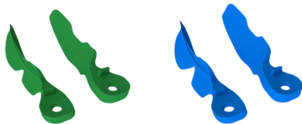
Replica

A disposable plastic replica of the cured portion of the OVC_3 Hybrid, with a handle, matching the selected tooth type and size.

The Replica is used to confirm that the occlusal clearance obtained during tooth preparation is sufficient. It serves as a confirmation of the size selection and suitability.

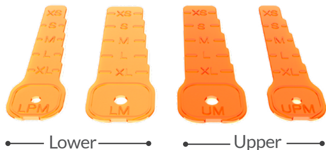
The Replica also provides a good visual of the overall 3D position of the OVC_3 on the prep and the relationship with adjacent and opposing dentition.

OVC Wedges



These are single-use plastic wedges used for deep gingival procedures. They come in two sizes, green are small and blue are large. Each pair come as a right and left wedge. The wedges may be placed from the buccal or lingual aspect with the concave, smooth area facing the preparation. Green OVC wedges are in each refill and Blue OVC wedges are in kits.

Selector Keys



These are single-use gauges made of transparent orange plastic, available in four types:

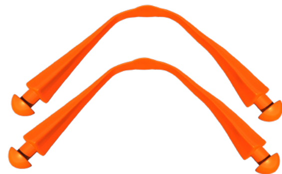
- Lower Premolar (LPM) (light orange)
- Lower Molar (LM) (light orange)
- Upper Molar (UM) (dark orange)
- Upper Premolar (UPM) (dark orange)

Selector Keys have a dual function. One is to determine the mesial-distal (M-D) distance of the damaged tooth so that the correct OVC_3 Hybrid size is selected. The second function is to facilitate the spot curing of the center of the OVC Hybrid, using the hole in the handle, to lock the vertical dimension.

McDonald Matrix Band™

The McDonald Matrix Band™ is a single-use circumferential matrix band pre-contoured for each tooth shape and size. It is placed around the preparation, tightened with the Hex Stick, to shape the uncured hybrid ceramic sub-layer of the OVC_3 Hybrid.

Stretch Wedge™



Stretch Wedges are flossed between the teeth and pulled tight to create separation and securely hold the matrix band in place. They are gentle on the papillae and have adjustable separating force (the harder you pull the more separation you get).

OVC™ 3

One Visit Crown

Direct Procedure Experienced Users

RHONDIUM™

INSTRUCTIONS FOR USE

DIRECT PROCEDURE

There are two ways to complete an OVC_3 restoration; the *semi-indirect* procedure and the *direct* procedure.

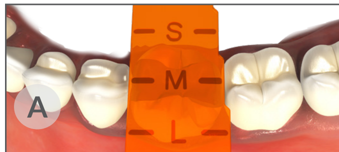
For new users we recommend using the *semi-indirect* procedure, see the reverse of this booklet.

For experienced users we recommend using either the *direct* or semi-indirect procedure depending on each individual case.

OVC_3 DIRECT PROCEDURE

1. OVC_3 Selection

Determine the mesial-distal (M-D) distance of the affected tooth using the appropriate Selector Key to confirm the OVC_3 size needed for that restoration **(Figure A).**



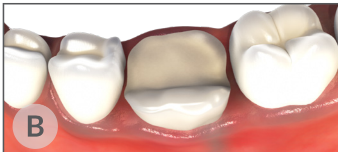
Clinical Tip: *It is more accurate to measure the mesial-distal distance once the tooth is reduced and the contacts are removed. Another option is to take a bite registration impression at initial consult and use a Selector Key to measure the impression.*

2. Tooth Preparation

Clinical Tip: *Check the bite with occlusal paper while the local anesthetic is taking effect. Then reduce any obvious opposing cusps that might cause occlusal interference.*

Prep the tooth, allow at least 1 mm of clearance in the central fossa and 1.5 mm at the cusps and marginal ridges **(Figure B)**.[†1]

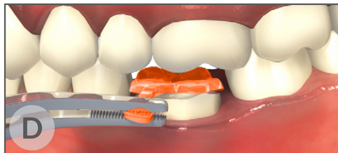
Clinical Tip: *Bevel the margins for better bonding, shade blending and easier McDonald Matrix Band™ placement.*



Check opposing and adjacent dentition and perform corrections if needed (e.g. over erupted cusps, poorly contoured adjacent restorations).

Open the appropriate OVC_3 case **(Figure C).**

Hold the Replica handle using tweezers and place on the prep to confirm its M-D fit over the prep. Ask the patient to gently bite down with Replica in place. Ensure there is adequate occlusal clearance – the Replica should have sufficient space to move when the handle is gently tugged **(Figure D).**



Also check the Replica has not been tilted due to an opposing cusp – adjust opposing dentition if required.

Clinical Tip: *Spray the underside of the Replica with an occlusal spray to identify where further reduction of the prep is needed after the patient bites down (Bausch Arti-Spray® Occlusion-Spray).*

Deep defects should be built up, prior to using the matrix band, to within 2-3 mm of the occlusal plane using the green or blue OVC wedges. This will help with the retention of the McDonald Matrix Band™ and the Stretch Wedge™.

3. Place McDonald Matrix Band™

Carefully place the McDonald Matrix Band™ as shown. The matrix band is then tightened by turning the screw clockwise with the supplied Hex Stick **(Figure E).**

Clinical Tip: *The McDonald Matrix Band™ can be unscrewed and re-tightened if adjustments are necessary. Ideally the McDonald Matrix Band™ can be tightened enough to seal the cavity margins **without** using a wedge. If the margins are not 100% sealed then use a Stretch Wedge™, or other wedge as appropriate.*

Use standard direct composite bonding techniques (etch and bond) to cover the tooth preparation. †2

Optibond FL (Kerr Dental) or Clearfil SE Bond (Kuraray Dental) are recommended.

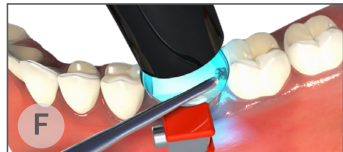
Gently burnish proximal zones of the matrix band as required to form a good emergence profile and ensure the band is touching the neighbouring teeth.

Clinical Tip: *Bands are made from soft stainless steel which can be over burnished.*

Build up the proximal boxes with composite or flowable resin to just below the contact point.

Optionally, seal the beveled margins with a small amount of flowable and then cure.

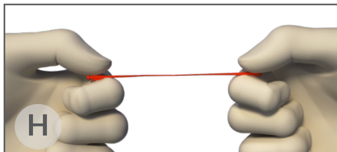
Use a ball burnisher or flat plastic instrument to hold the matrix band against the adjacent mesial tooth while curing. Repeat for distal **(Figure F).**



DO NOT cover the contact points with composite as you need to burnish again after wedging **(Figure G).**

Slowly stretch the Stretch Wedges a few times prior to use. This strengthens the wedges and allows for increased interproximal separation **(Figure H).**

Floss the Stretch Wedges down at an angle to avoid damaging the band or cutting the Stretch Wedge™.



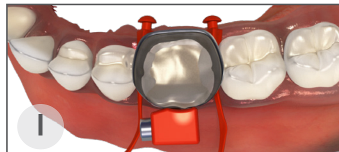
Pull Stretch Wedges **very** firmly to create separation. This step can be repeated for extra separation.

Some dentists prefer wooden wedges to create separation.

Re-burnish contact points to ensure the matrix band is touching the neighbouring contacts **(Figure I).**

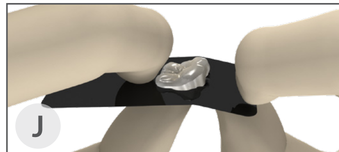
4. OVC_3 Placement

Apply a small amount of flowable composite on the tooth to prevent



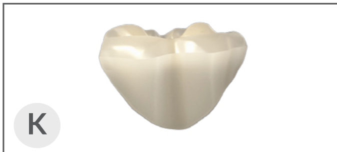
bubble formation (do not cure).

Remove the OVC_3 from the packaging by fully inverting the black film **(Figure J).** †3

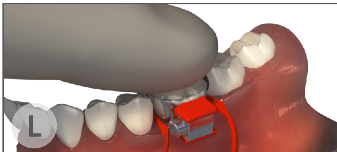


Use your fingers to form the uncured sub-layer of the OVC_3

into a rounded cone-shape **(Figure K)**.



Place the OVC_3 inside the matrix band and gently depress until the marginal ridges are aligned with the marginal ridges of the neighboring teeth (**Figure L**).†4

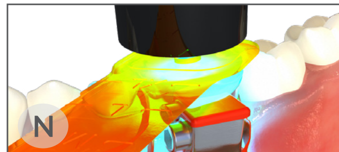


Clinical Tip: *If the crown is slightly out of occlusion it should erupt back into occlusion over the next couple of weeks.*

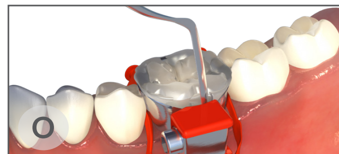
Use a flat-plastic instrument to horizontally align the OVC_3 fissures with neighbouring teeth **(Figure M)**.

Check buccal/lingual alignment with remaining tooth structure, make corrections if necessary.

Using the Selector Key hole, spot cure for 3-5 seconds* to secure vertical dimension **(Figure N)**.



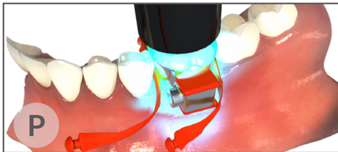
Using a sharp carving instrument remove the excess material and adapt the remainder to form natural contours **(Figure O)**.



Make sure the marginal ridge area has been cleared of any composite overflow before fully curing.

***Clinical Tip:** If excess flowable resin is present, air blow away.*

Fully Cure the OVC_3 **(Figure P).**



5. Remove the McDonald Matrix Band

Remove the Stretch Wedges by flossing out or cutting with scissors.

Loosen the McDonald Matrix Band™ by turning the screw counter-clockwise.

Remove the matrix band by levering the buccal side with a flat-plastic instrument.

The lingual side of the band can also be cut with scissors or a handpiece.

6. Finish the OVC_3

Fully cure each surface for 20 seconds*.

Polish and adjust the restoration as required.

High speed diamond burs can be used for large reductions if required, then polishing burs or discs for a final polish.

Check the bite and adjust if necessary to complete the restoration.

For more clinical tips, free online training and FAQ's visit www.rhondium.com.

† Notes:
1 - With the direct procedure - do not paint the prepared tooth surface with a separating agent.
2 - Do not apply bonding agent to the OVC_3.
3 - Do not trim the hard OVC_3 occlusal layer prior to seating on the prepared tooth.
4 - There should be sufficient uncured composite available on the OVC_3, do not add uncured composite.

**Based on a 1,000 mW/cm² curing light*

CLEANING

- Selector Keys, OVC Wedges, Stretch Wedges™, McDonald Matrix Band™, Hex Stick and Replicas are single use only.

POST-OPERATIVE

As with standard dental treatment, advise patient to return if there is any discomfort or a problem with the restoration is experienced.

EC REP

EMERGO EUROPE
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STORAGE

Store the OVC at 1°C to 25°C (34°F to 77°F). When not in use, keep containers closed, protect contents from moisture and contaminants.

Accessory items to be stored according to manufacturers' label instructions.

See Instructions for Use

Dentist Use Only

Single Use Only

Use by

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