HADER SOLUTIONS

Hader RX

USER GUIDE

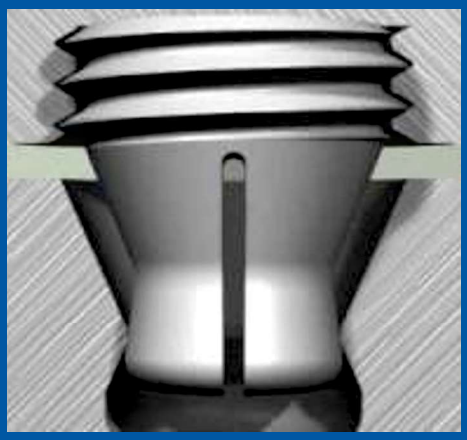
Swiss Made

www.hader.eu

Hader RX. Immunity to resilience and easy maintenance

SMART FUNCTIONAL DESIGN

Hader RX features a smart design that allows for immunity to resilience during function. Whether during mastication or daily wear, its vertical and hinge movement ensures consistent stability while preventing unwanted forces from affecting the prosthesis and the surrounding tissues. Additionally, the spring pin mechanism produces a distinct “click” when it snaps into the conical female, providing the patient with clear confirmation that the prosthesis is securely seated. This smart engineering results in a comfortable, reliable, and long-lasting restoration.



MULTIPLE SIZE OPTIONS

Hader RX is available in two main spring pin diameters (2mm and 3mm), with additional oversized options to accommodate various case requirements. Its adjustable and removable design makes it a versatile and reliable solution.

VERSATILITY

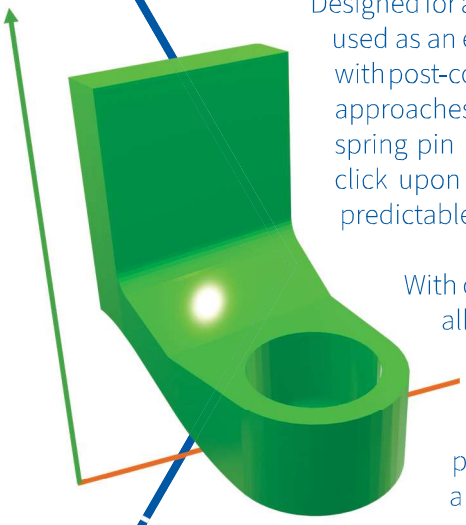
Hader RX is one of the most adaptable attachment systems, suitable for full and partial dentures, as well as for use in extracoronal applications, over bars, and post-copings. It provides multiple manufacturing options, allowing dental professionals to choose from pre-fabricated components for bonding, acrylic retention, or soldering, depending on the case requirements.

EASY MAINTENANCE

The threadable male components make maintenance and replacement incredibly easy. Retention doesn’t always require replacing the male, it can be re-adjusted using the activating tool and retention adjustment accessory, extending the lifespan of the attachment. This ensures simplicity, efficiency, and precision, reducing the need for frequent replacements.

OPTIMIZED FOR AESTHETICS & FUNCTION

The spring pin and conical female system of Hader RX are completely hidden, providing a discreet alternative with secure retention. The unique buccal reduction of the female profile allows more space for acrylic resin or porcelain veneering, ensuring aesthetic excellence without compromising retention.



Hader RX combines versatility with a precision-engineered design, making it a reliable solution for partial and full dentures. Designed for a wide range of applications, it can be used as an extracoronal attachment, on bars, or with post-copings, adapting to various treatment approaches. With multiple male sizes and a spring pin mechanism that provides a distinct click upon secure seating, **Hader RX** ensures predictable retention and patient confidence.

With carefully designed CAD-CAM kits and all castable patterns available in the Hader Digital Library, **Hader RX** is optimized for modern digital workflows, ensuring efficient production, superior accuracy, and a precise fit. **Hader RX** represents a classic attachment system, now enhanced for the next generation of digitally optimized solutions.

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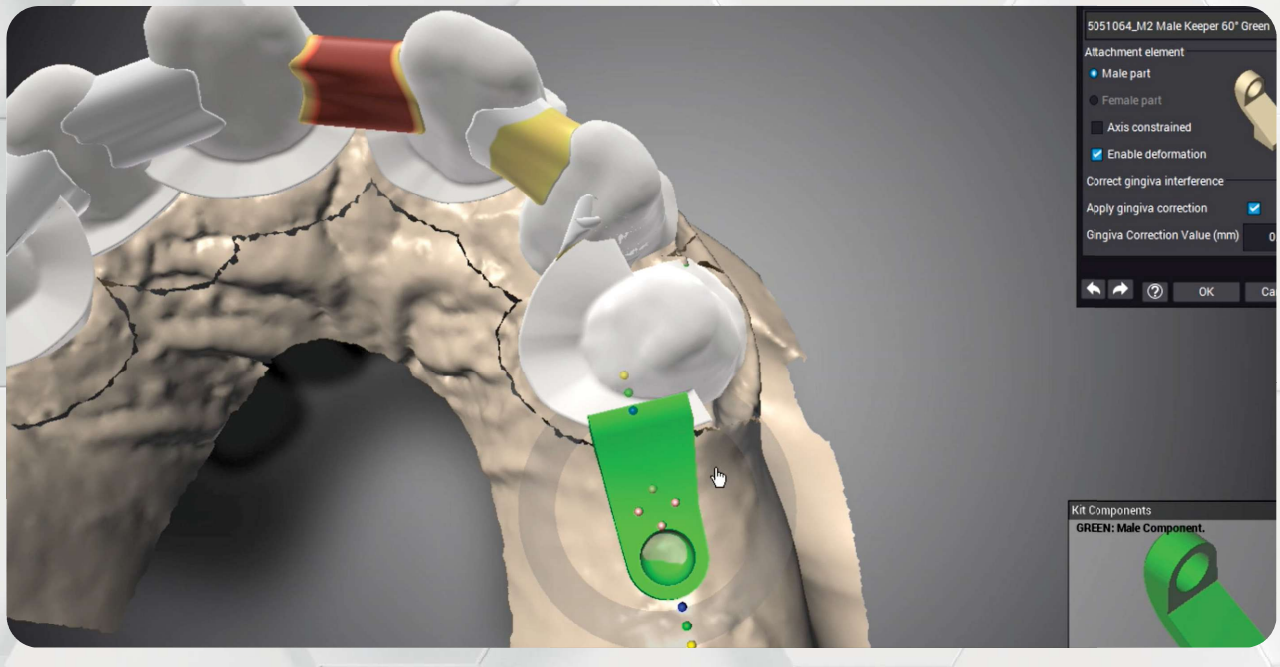
ALSO AVAILABLE FOR

CAD
CAM

It's time to unlock the full potential of digital dentistry with the Hader Digital Library. Visit our website www.hader.eu, or **scan the QR code** to download the Digital Library today, and take your dental practice to new heights.



Explore our website at www.hader.eu to access a wealth of resources, including user guides, inspiring design videos, brochures, and many more valuable tools to enhance your experience. Dive into a world of innovation and excellence today!

HADER
SOLUTIONS

Male Components

1. Identification and use of Spring Pins

All spring pins are made of PALLAX

Hader RX offers a variety of male components. For new prostheses, we recommend using the standard diameter spring pins with a Ø1.88mm diameter head, and size M3 providing there is adequate space.

If a spring pin needs to be replaced, there are three factors to consider in order to choose the right one:

1. Size of Threading (M2 or M3): To identify, first compare the existing pin with the pictures below. If the thread size can't be identified this way, use one of the following accessories by screwing it onto the retention nut: **ref-5051093 – M2**, **ref-5051005 – M3**

2. Diameter of Head: Use the **Hader Spring Pin Indicator Set (ref-5051078)** to determine the right diameter of an existing female component, as they might wear over time.

3. Length: If an existing pin doesn't fully click into the female component, there are **0.3mm longer** spring pins available.

Standard Pins

Head: Ø1.88mm
M2: Ø2mm - H: 2.7mm / **M3**: Ø3mm - H: 3.15mm

M2 Resilient | **M3 Resilient** | **M3 Rigid**

Larger Head Pins

Head: Red Ø1.95mm, Blue Ø2.02mm, Black Ø2.09mm
M2: Ø2mm - H: 2.7mm / M3: Ø3mm - H: 3.15mm

M2 Resilient | **M3 Resilient** | **M3 Rigid**

Longer Pins

Head: Ø1.88mm
M2: Ø2mm - H: 3mm / **M3**: Ø3mm - H: 3.45mm

M2 Resilient | **M3 Resilient**

REMOVING AND PLACING A SPRING PIN

Activating Tool
ref-5051004-1

Activating tool and screwdriver

Use only Hader tools for screwing spring pins

Laboratory Key
ref-5051094-1

Only for laboratory use

1- Always clean the spring pin with compressed air before using the key. This will allow a perfect fit of the cross shaped active part of the key with the spring pin and prevent breaking
2- Turn left to unscrew the existing pin.
3- Fit the new pin in the retention nut and screw it by turning the key right.

ACTIVATION AND DEACTIVATION

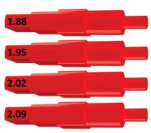
For more retention, use the activating tool (ref-5051004-1).
1- Insert the blade of the activating tool vertically between the four segments of the pin.
2- Press to activate and check retention.
Note: Do not make lateral movements or bend the segments of the pin as they might break.

Retention Adjusting Accessory
ref-5051086-1
Only for laboratory use

For less retention, use the retention adjusting accessory (ref-5051086-1)
1- Carefully, place the active head of the accessory over the pin and squeeze
2- Check retention.
Use only outside the mouth.

OVERSIZED MALES

In rare cases, the female component might wear. If this happens, use one of the oversized spring pins. Sterilise the indicators before using them in the mouth.



Spring Pin Indicator Set
ref-5051078
To verify the diameter of the females

1- Press each indicator into the female component, beginning with the smallest diameter one.
2- The indicator with the most adequate friction indicates the size of spring pin needed.

Soldering Accessories 2PCS
M2 ref-5051093-2
M3 ref-5051005-2

One reason for worn females, are unparalleled attachments. **To check parallelism:**
1- Unscrew the spring pins.
2- Screw the corresponding accessory (M2 or M3) in the retention nut and visually check if the accessories are parallel to each other.

USE OF ANALOGS

Resilient Working Dummies 2PCS
M2 ref-5051091-2
M3 ref-5051087-2

The working dummies are made of stainless steel, have reduced retention, and can replace the spring pins during fabrication of the prosthesis, to prevent damaging them.

1- Screw the working dummies in the retention part with the activation tool as described above.
2- Always remember to replace the working dummy with the definitive spring pin after processing.

HADER SOLUTIONS

Male Components - Manufacturing of Prosthesis

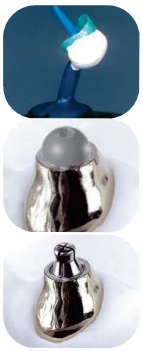
2. Axial Attachment

* This chapter outlines the procedure for processing the male component. For details on processing the female component, please refer to the chapter "Female Components – Manufacturing of Prosthesis."

MALE ON A POST COPING - CAST ON TECHNIQUE **Only available for M2**

The advantage of placing the male on the post-coping is that it can reduce the possibility of food impaction into the female. The pin will be screwed into the base ring which will be casted to the post-coping, and the female component will be included in the prosthesis.

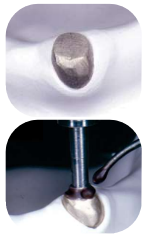
1. Wax up the coping as low as possible. We recommend using laboratory posts from the Hader Posts line.
2. Choose the base ring as: **IRAX (for precious alloys)** M2 (ref-5011037-1) or **NOPRAX (for non-precious alloys)** M2 (ref- 5011038-1).
3. Screw the paralleling mandrel M2 (ref-5051047-1) to the base ring.
4. Ensure there is a 90° angle between the occlusal surface of the base ring and the path of insertion.
5. Wrap the base ring entirely with wax.
6. Ensure the wax pattern stops slightly below the upper metal ledge (a few tenths of a millimetre) to prevent metal intrusion.



7. Apply anti-flux to the threads of the base ring to avoid cast metal adhesion. Allow it to dry thoroughly before proceeding.
8. Invest in two stages. Let the first investment layer cure for 30 minutes. Carefully pour investment into the ring threads. **Don't sandblast**. Create a small slot in the wax around the base ring with a fine instrument to prevent metal from entering.
9. Cast as usual.
10. Optional : Screw a protective cap ref-5011039 (M2) / ref-5051108 (M3) onto the Base Ring to provide temporary protection while the prosthesis is being fabricated. The cap must not remain in the patient's mouth for more than 30 days.
11. Process the prosthesis.
12. Screw the spring pin.

MALE ON A POST COPING - SOLDERING TECHNIQUE **Only available for M3**

The advantage of placing the male on the post-coping is that it can reduce the possibility of food impaction into the female. The pin will be screwed into the base ring which will be soldered to the post-coping, and the female component will be included in the prosthesis.



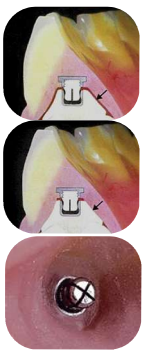
1. Cast and finish the coping. We recommend using laboratory posts from the Hader Posts line.
2. Use the base ring for soldering PALLAX: M3 (ref-5051008-1)
3. Screw the paralleling mandrel M3 (ref- 5051044-1) to the base ring.
4. Place it on top of the coping.
5. Ensure the base rings are parallel and apply wax to secure in place.

6- Tip: Apply anti-flux to the threads of the base ring for easy removal after soldering.
7- Invest, ensuring maintaining horizontal position. Use the soldering accessory M3 (ref- 5051049-2)
8- Solder as usual.
9- Screw the spring pin.

MALE IN THE PROSTHESIS - ACRYLIC RETENTION

The male component is embedded into the acrylic resin, while the female component is bonded to the post-coping. One of the advantages of this technique is that the retention part can be easily replaced in the future if necessary. Additionally, it may require less vertical space.
The male can be easily integrated in the prosthesis chairside in the patient's mouth "Direct Method" or in the laboratory "Indirect Method."

1- Assemble the spring pin and base with the key (ref- 5051004-1) or (ref-5051094-1), Always ensure the threaded bases match the size of the spring pin: M2 (ref-5051039), M3 (ref-5051028)
2- Always use the small space maintainer that matches the size of the spring pin, as: M2 (ref-5051077), M3 (ref-5051076).
Insert the 3-parts assembly into the female component in the post-coping in the model or in the patient's mouth.
3- Block the uncovered areas of the post coping with any block-out material.
4- For a resilient prosthesis, use the large space maintainer M2 (ref-5011036) or M3 (ref-5051083) exclusively for the indirect method. For the direct method use a thick rubber dam.



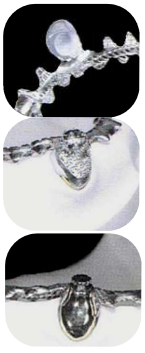
5- The rubber dam or space maintainer creates a gap between the post-coping and the prosthesis, allowing for free movement. This design helps distribute vertical forces more evenly, thereby reducing the pressure on the abutment.
Instead, when a rubber dam or large space maintainer is not used (bottom image), the prosthesis will function as a rigid structure, directing the forces directly onto the abutment.
6- Apply self-curing resin inside the prosthesis, it's recommended to create vents in advance to allow excess material to flow towards the lingual side.
7- Position the denture and pick up the male component from either the master model or the patient's mouth. If using the direct method, avoid having the patient bite down. Instead, apply finger pressure over the attachment area to ensure proper seating.

MALE IN THE PROSTHESIS - METAL FRAMEWORK

The male component is bonded into the metal framework, while the female component is bonded to the post-coping. As an alternative, the male can be processed into the acrylic resin all together with the framework. One of the advantages of this technique is that the retention part can be easily replaced in the future if necessary. Additionally, it may require less vertical space.

1- Apply a wax layer or hood over a refractory model, ensuring it covers at least 0.4mm over the attachment.
2- Cast as usual.

3- Before bonding, sandblast the internal surface with coarse aluminium oxide.
4- Screw the spring pin into the threaded base with the key (ref-5051004-1) or (ref-5051094-1). Ensure the base matches the size of the spring pin: M2 (ref-5051038) or M3 (ref-5051029).
5- Position the assembly over the small space maintainer into the female component. Use the small space maintainer that matches the size of the spring pin, as: M2 (ref-5051077), M3 (ref-5051076).



6- Using the mix tip, apply Site B (ref-1041020-1) to each unit in the metal frame.
7- Position the metal frame with Site B over the attachment, and let it set undisturbed for a full 10 minutes.
8- Remove any excess of material.
9- As an alternative to bonding, the male component can be directly incorporated into the acrylic resin.
Start by placing the small space maintainer on the female component. Next, position the framework. Screw the spring pin into the acrylic retention part: M2 (ref-5051028) or M3 (ref-5051039).
Seat it in the female component over the framework. Proceed with processing the acrylic, then remove the spacer.

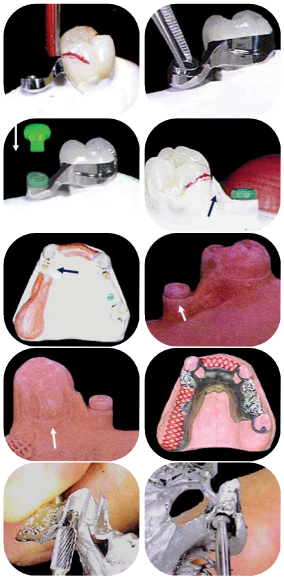
3. Extracoronal Attachment

* This chapter outlines the procedure for processing the male component. For details on processing the female component, please refer to the chapter “Female Components – Manufacturing of Prosthesis.”

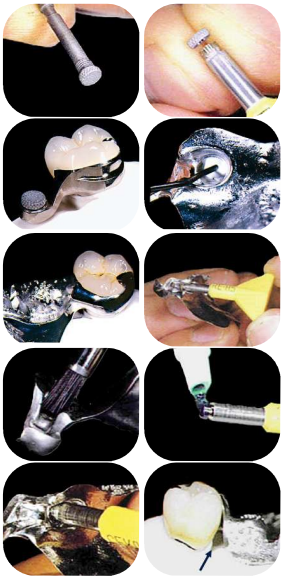
BONDING TECHNIQUE

The female component as an extracoronal attachment, with the male component bonded into the prosthesis.

1. Glaze the porcelain and finish all metal surfaces. Cover any undercuts. Place a small space maintainer that matches the size of the spring pin: M2 (ref-5051077), M3 (ref-5051076).
2. Insert the duplicating dummy into the female. It will create space in the metal frame for bonding the retention part.
3. Apply a 0.5mm layer of wax to the inclined arm, leave the duplicating dummy wax-free.
4. End the relief wax just before the attachment to create a beading strip for the acrylic resin of the prosthesis.
5. Duplicate the master model. It’s crucial to accurately replicate the dummy, the undercut and the lingual shoulder.
6. Finish the wax-up, sprue and cast as usual.
7. Use the RX Carbide Drill (ref-5051002-1) to finish the inside of the metal sleeve.
8. Use the RX Diamond Drill (ref-5051001) to remove any artifacts inside the cavity. Before bonding, sandblast the internal surface with coarse aluminium oxide.



9. Use the RX Soldering Accessory M2 (ref-5051093) or M3 (ref-5051005) to sandblast the retention part.
10. Screw the spring pin into the threaded base with the key (ref-5051004-1) or (ref-5051094-1) and position the assembly over the small space maintainer into the female component.
11. Make sure the cavity is clean and apply Site B (ref-1041020-1) to each unit in the metal frame.
12. Seat the frame, apply light finger pressure and let it set for 10 minutes. Remove any excess of material.
13. Remove the spring pin and space maintainer. Polish the cavity to a high shine.
14. Hader lock (ref- 1041021-1) can be used to prevent the gradual unscrewing of the spring pin.
15. Screw the spring pin back in place. Ensure the frame has enough space for hygiene and aesthetics.
16. Process the prosthesis as usual.



ACRYLIC RETENTION TECHNIQUE

The female component as an extracoronal attachment, with the male component integrated into the prosthesis by acrylic retention.

The retention part is available for:

- Winged Retention: M2 (ref-5051037), M3 (ref-5051027) it can be bent if necessary.
- Circular Retention: M2 (ref-5051039), M3 (ref-5051028)

1. Finish the extracoronal element, glaze and polish. Cover the inclined arm with a 0.5 mm layer of wax and fill the inside of the female component.
2. End the relief wax just before the attachment to create a beading strip for the acrylic resin of the prosthesis.
3. Duplicate the model ensuring to accurately replicate all the contours and milled parts.
4. Wax the frame. Ensure to surround the female with a minimum of 0.5 mm of wax while leaving the occlusal surface uncovered.

5. Cast and finish the frame, ensure the access hole is sufficiently wide to provide access to the female component and that it fits the abutment precisely in the master model.
6. Screw the spring pin into the retention part with the key (ref-5051004-1) or (ref-5051094-1).
7. Place the small space maintainer over the female: M2 (ref-5051077) or M3 (ref-5051076)
8. Place the assembled parts into the female. The wing extension of the retention part can be bended if needed. Do not try to solder the retention part to the metal frame as it’s made of a titanium alloy.
9. Process the acrylic resin as usual. Finish and polish. Remove the space maintainer and screw the spring pin back. Hader lock (ref-1041021-1) can be used to prevent the gradual unscrewing of the spring pin.

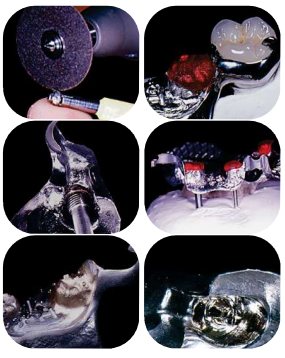
SOLDERING TECHNIQUE

The female component as an extracoronal attachment, with the male component soldered into the prosthesis.

1. Finish and polish the extracoronal element and insert the duplicating dummy into the retention part for soldering, ensuring they match in size, as:
   - Dummy: M2 (ref-5051091), M3 (ref-5051087)
   - Retention Part: M2 (ref-5051011), M3 (ref-5051030)

2. Insert the assembly into the female in the master model, cover the inclined arm and all the undercuts with a thin layer of wax and duplicate the model as usual.
3. Wax up the frame for casting, cover all around the attachment while leaving the solder access hole unblocked.
4. Cast and finish the metal frame.

5. Prepare the stud of the retention part by grinding undercuts for the pick-up process.
6. Widen the solder access hole in the frame, then use cold-cure acrylic to pick up the male component.
7. Replace the dummy spring pin with the soldering accessory M2 (ref-5051093) or M3 (ref-5051005)
8. Invest, solder and finish the frame.
9. Screw the spring pin into the retention part with the key (ref-5051004-1) or (ref-5051094-1). Hader lock (1041021-1) can be used to prevent the gradual unscrewing of the spring pin.



4. Repairs

REPLACING A MALE IN THE MOUTH OR PROSTHESIS

1. Clean the spring pin with compressed air to remove any debris and allow for a perfect fit of the key. This will prevent breaking any of the segments of the spring pin.
2. Follow the steps described in chapter "Removing / placing" a spring pin of this document. Never use other tool apart from the Hader original tools.
3. In rare cases, the female component might wear. In this case, use one of the oversized spring pins and the Hader Spring Pin Indicator Set (ref-5051078)
4. If the spring pin doesn't fully click into the female component use a longer spring pin.

REPLACING A MALE WITH BROKEN COMPONENTS

1. Grind the remaining parts of the segments until they are all the same height and create a deep groove in the base of the spring pin using the wheel burr (ref-1041013).
2. Use the Activating Tool (ref-5051004) to unscrew the remaining part of the spring pin.

REPLACING A BONDED RETENTION PART

1. Remove the spring pin from the retention part.
2. Identify the spring pin size and screw the soldering accessory in the retention part, as: M2 (ref-5051093) and M3 (ref-5051005).
3. Protect all plastic parts with a heat-resistant material and apply heat to the tip of the soldering accessory until it becomes red hot.
4. Hold the end of the accessory with pliers and remove the retention part by applying firm side-to-side movements. Immediately cool the prosthesis in water afterward.

5. Sandblast the inside of the cavity with aluminium oxide but keep the retentive ledge intact.
6. Screw the soldering accessory to a new retention part M2 (ref-5051106-2), M3 (ref-5051107-2) and sandblast the outside. Never reuse the removed retention part.
7. Assemble the retention part with a spring pin + a space maintainer and insert into the female.
8. Apply a small amount of Site B in the cavity in the prosthesis, seat it in place and wait for the Site B to set. Remove any excess of material.
9. Ensure that the spring pins snap correctly into the female.

REPLACING A RETENTION PART FOR ACRYLIC RETENTION

1. Identify the size of the spring pin (M2 or M3) and match with the retention part in the prosthesis.
   - Winged Retention: M2 (ref-5051037), M3 (ref-5051027) it can be bent if necessary.
   - Circular Retention: M2 (ref-5051039), M3 (ref-5051028)

2. Create a labial key of the prosthesis to ensure there is enough space and a proper fit for the new retention part. With a bur for acrylic, remove the retention part and make a cavity in the prosthesis that fits the size of the new retention part.
3. Use the key (ref-5051004-1) or (ref-5051094-1) to assemble a new retention part with a matching size spring pin. Place a small space maintainer over the spring pin.
4. Insert the assembly into the female and protect it with Vaseline or block-out material.

5. Check the prosthesis fit and proceed to mix self-curing acrylic resin. Apply it in the cavity and place the prosthesis in the mouth.
6. After setting, finish and polish the prosthesis, remove any excess of acrylic resin.

REPLACING A SOLDERED RETENTION PART

1. Identify the size of the spring pin (M2 or M3) and match with the retention part in the prosthesis. M2 (ref-5051011) or M3 (ref-5051030)
2. Place the components over the spring pin in the prosthesis.
   - M2: (ref-5051092-2) female analogue + space maintainer.
   - M3 resilient: (ref-5051088-2) female analogue + space maintainer.
   - M3 rigid: (ref-5051088-2) female analogue without space maintainer

3. Make a duplicated model with the female analogues included and a labial key of all plastic prosthetics parts as teeth and saddles.
3. Remove the spring pin from the retention part.
4. Remove the acrylic resin denture saddle and use a burr to remove the retention part. Apply flux to the areas that are resistant to oxidation. Gently clean off any remaining solder residue.
5. Screw a new spring pin + space maintainer to the retention part, as:
   - M2: (ref-5051011-2) retention part, (ref-5051112-2) spring pin + space maintainer.
   - M3 resilient: (ref-5051030-2) retention part, (ref-5051111-2) spring pin + space maintainer.
   - M3 rigid: (ref-5051030-2) retention part, (ref-5051032-2) spring pin without space maintainer
6. Place the assembly into the female analogue in the model and solder the retention part.

Available Kits

M2 - 5052012
M3 - 5052004
RX TITANAX Bonding Kit Extracoronal

M2 - 5052010
M2 - 5052002
RX TITANAX Winged Acrylic Kit Extracoronal

M2 - 5052014
RX TITANAX Circular Acrylic Kit Extracoronal

M2 - 5052008
RX TITANAX Soldering Kit Extracoronal

M2 - 5052016
M3 - 5052007
RX TITANAX Bonding Kit Axial

M2 - 5052017
RX TITANAX Acrylic Kit Axial

M2 - 5052024
RX TITANAX Soldering Kit Axial

Female Components

1. Identification and use

Hader RX is available in sizes **M2 and M3.** For new prosthesis we recommend using size M3 attachments providing there is adequate space.

To identify the size of an existing female, use Hader keys (ref- 5051004-1) or (ref-5051094-1) to screw a spring pin with an impression tool of the same size, insert the assembly into the female and check it fits.

M2 female: spring pin (ref-5051112) + Impression tool (ref-5011043).

M3 female: spring pin (ref-5051111) + Impression tool (ref-5051110).

Female Titanax

For bonding technique

M2 and M3

Female With Keeper

Female in TITANAX with plastic keeper for bonding in post copings or bar constructions.

M2 and M3

Female With Angled Keepers

3 Plastic keepers (30°, 45°, 60°) with female for bonding technique.

M2 and M3

M3 Axial Female

TITANAX: Retention in acrylic resin.
IRAX: Retention in acrylic resin, soldering, or direct casting.

TITANAX **IRAX**

USE OF PLASTIC KEEPERS

M2: ref- 5051117-1 / **M3:** ref- 5051118-1

Burn-out plastic parts used for casting and supporting the bonding female. Each kit includes three keepers and one TITANAX female for bonding, suitable for casting with any dental alloy.

Accurate Inclination: Hader plastic keepers offer three inclination options (30°, 45°, 60°) to achieve a periodontally friendly design, improve aesthetics, and maximise vertical space for denture teeth.

Always select the keeper that best matches the ridge anatomy and the position of the abutment and soft tissue.

Ideal Position:

1.Relative to the abutment crown: connect at the contact area.
2.Relative to the papilla: allow enough space for easy cleaning and proper papilla access.
3.Relative to the gingiva: ensure passive contact with the ridge to avoid tissue overgrowth and preserve vertical space.
4.Aesthetic position: the buccal taper of the connection arm provides a smooth, natural transition to the prosthesis.
5.Relative to the alveolar ridge: align the female component towards the centre of the ridge.

BONDING TITANAX FEMALES WITH SITE B

SITE B (1041020-1) is a dual-component bonding composite supplied in a 2 g syringe with an auto-mix tip. Store it refrigerated (3–9°C) and allow it to reach room temperature before use.

ref- 1041020-1

Content: 2 x 2g composite / 6 auto-mix tips

Key Advantages
- Passive Fit Bonding.
- Versatile Applications.
- High Stability.
- Easy Handling.
- For Lab and Chairside Use.

1.Ensure all parts are clean and roughened. Use the RX Bonding and Sandblasting Tool (5051089-1) with a coarse material.
2.Remove SITE B from the refrigerator and let it rest at room temperature for 2 hours.
3.Prepare components, attach the auto-mix tip, and apply within 90 seconds after mixing.
4.Apply evenly, avoiding air bubbles, then assemble and let set for 10 minutes.

SITE B does not cure when exposed to air, allowing easy removal of excess material.

HADER SOLUTIONS

Female Components - Manufacturing of Prosthesis

2. Axial Attachment

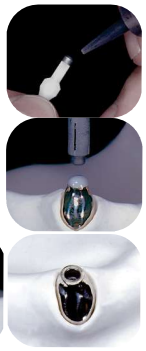
* This chapter outlines the procedure for processing the female component. For details on processing the male component, please refer to the chapter "Male Components – Manufacturing of Prosthesis."

FEMALE ON THE POST COPING

The male component is placed in the prosthesis, while the female component is bonded to the post-coping. The post-coping can be casted in any precious or no precious dental alloy.
One of the advantages of this technique is that the retention part can be easily replaced in the future if necessary. Additionally, it may require less vertical space.

1. Wax up the coping as low as possible.
2. Choose the plastic keeper that best fits the case: M2 (ref-5051120-1) or M3 (ref-5051119-1)
3. Use the Hader RX Paralleling Mandrel Profile of the same size of the plastic keeper M2 (ref-5051048-1) or M3 (ref-5051045-1), to position it ensuring a 90° angle between the occlusal surface of the plastic keeper and the path of insertion.
4. The attachments must also be parallel to each other.
5. Wax the coping on a concave shape to provide enough space for the denture teeth.
6. Cast and finish as usual.

7. Use the Bonding and Sandblasting Tool (ref-5051089-1) or the Paralleling Mandrel for Females (ref-5051046-1) to pick up the TITANAX female, and sandblast with coarse aluminium oxide.
8. Sandblast the inside of the female in the post-coping as well.
9. Using the automix tip, apply Site B (ref-1041020-1) in the female in the post-coping.
10. Let is set for 10 minutes.
11. Finish and remove any excess.



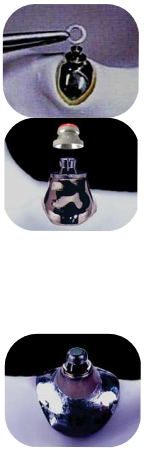
FEMALE IN PROSTHESIS – ACRYLIC RETENTION

Only available for M3

The male component is placed in the post-coping and the female in the prosthesis.
The advantage of placing the male on the post-coping is that it can reduce the possibility of food impaction into the female.

The female can be easily integrated in the prosthesis chairside in the patient's mouth "Direct Method" or in the laboratory "Indirect Method."
Note: When a resilient prosthesis is needed, use the large space maintainer (ref-5051083-1) for the indirect method only. For the direct method, a thick rubber dam can be used instead.

1. Place the small space maintainer over the spring pin in the model or in the patient's mouth. Ensure the size of the space maintainer matches the size of the spring pin: M3 (ref-5051076).
2. Assemble the right axial female on the spring pin: IRAX (ref-5051026-1) or TITANAX (ref-5051025-1)
3. Block the uncovered areas of the post coping with any block-out material.
4. When a resilient prosthesis is required, use the large space maintainer (5051083-1) exclusively for the indirect method. For the direct method, a thick rubber dam can be used as an alternative.

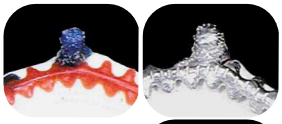


5. Whether using a thick rubber dam or a large space maintainer, these should be placed over the post-coping when a resilient prosthesis is desired. In this scenario (top image), the rubber dam or large space maintainer creates a gap between the post-coping and the prosthesis, allowing for free movement. This design helps distribute vertical forces more evenly, thereby reducing the pressure on the abutment. Instead, when a rubber dam or large space maintainer is not used (bottom image), the prosthesis will function as a rigid structure, directing the forces directly onto the abutment.
6. Apply self-curing resin inside the prosthesis, and it's recommended to create vents in advance to allow excess material to flow towards the lingual side.
7. Position the denture and pick up the female component from either the master model or the patient's mouth. If using the direct method, avoid having the patient bite down. Instead, apply finger pressure over the attachment area to ensure proper seating.

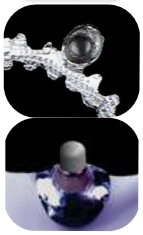
FEMALE IN PROSTHESIS – METAL FRAMEWORK

The female component is bonded into the metal framework, while the male component is in the post-coping. As an alternative, the female can be processed into the acrylic resin all together with the framework. The advantage of placing the male on the post-coping is that it can reduce the possibility of food impaction into the female.

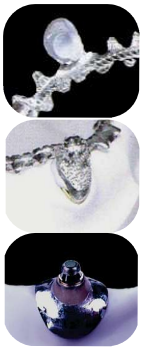
1. Apply a wax layer or hood over a refractory model, ensuring it covers at least 0.4mm over the attachment.
2. Cast as usual.



3. Before bonding, sandblast the internal surface with coarse aluminium oxide.
4. Assemble the right size space maintainer M2 (ref-5051077), M3 (ref-5051076) and TITANAX Female on the spring pin. TITANAX: M2 (ref-5051013) / M3 (ref-5051018)
5. Block the uncovered areas of the post coping with any block-out material.



6. Using the automix tip, apply Site B (ref-1041020-1) to each unit in the metal frame.
7. Position the metal frame with Site B over the attachment, and let it set undisturbed for a full 10 minutes.
8. Remove any excess of material.
9. As an alternative to bonding, the female component can be directly incorporated into the acrylic resin. Only available for M3. Assemble the right size space maintainer M3 (ref-5051076) and axial female on the spring pin. IRAX: M3 (ref-5051026-1) or TITANAX: M3 (ref-5051025-1)
10. Position the metal structure and process the acrylic resin.



Available Kits

Also available for CAD CAM

M2 - 5052013
M3 - 5052005
RX TITANAX Bonding Kit Cad-Cam

M2 - 5052009
M3 - 5052001
RX TITANAX Soldering Kit Cad-Cam

M2 - 5052011
M3 - 5052003
RX TITANAX Winged Acrylic Kit Cad-Cam

M2 - 5052015
M3 - 5052006
RX TITANAX Circular Acrylic Kit Cad-Cam

3. Extracoronal Attachment

* This chapter outlines the procedure for processing the female component. For details on processing the male component, please refer to the chapter "Male Components – Manufacturing of Prosthesis."

BONDING TECHNIQUE

The female component as an extracoronal attachment, with the male component integrated into the prosthesis through bonding, soldering, or acrylic fixation.

1. Prepare the wax up and include a 90° shoulder in the lingual surface. This will ensure an easy insertion and reduce wear.
2. Select the most appropriate plastic keeper. Use the Hader RX Paralleling Mandrel Profile M2 (ref-5051048-1) or M3 (ref-5051045-1).
Please refer to the section "Use of the plastic keepers" for tips about choosing the most accurate inclination and placing it in the ideal position.
3. The plastic keeper can be adjusted in shape and size to adapt to each individual situation and ensure aesthetics.
4. Always place the keeper at the centre of the ridge.
5. Secure the keeper with wax. Ensure the papilla is free and there is a passive contact for optimal hygiene.
6. It is recommended to invest in two stages.

7. Seat the structure on the model and confirm the passive contact has been achieved.
8. Reducing the shape of the plastic keeper before casting will result in improved aesthetics and make it easier to achieve the correct position of the first tooth in the prosthesis.
9. Add porcelain as usual, glaze and finish.
10. Use the Bonding and Sandblasting Tool (ref-5051089-1) or the Paralleling Mandrel for Females (ref-5051046-1) to pick up the TITANAX female, and sandblast with coarse aluminium oxide.
11. Sandblast the inside of the female keeper as well.
12. Using the automix tip, apply Site B (ref-1041020-1) in the keeper, seat the TITANAX female and let it set for 10 minutes.
13. Remove any excess and clean.
14. The extracoronal attachment is ready for installing.

CAST-ON FEMALES

Only available for M3

M3 cast on females for easy cast-on technique. The yellow PLATIRAX attachments (ref-5051099) is for casting with any dental alloys.

1. Wax-up the crowns and include the attachment ensuring a passive contact on the ridge.
2. Invest in two stages. Sprue connecting to the abutment and to occlusal of the bar. Cast.

Available Kits

Resilient - 5052018
Rigid - 5052021
RX PLATIRAX Acrylic Kit

Resilient - 5052019
Rigid - 5052022
RX PLATIRAX Bonding Kit

Resilient - 5052020
Rigid - 5052023
RX PLATIRAX Bonding Kit

3. Bar Attachment

Hader RX can be used by including the female on a bar, with the male component integrated into the prosthesis through bonding, soldering, or acrylic fixation.
This section outlines the procedure for including a female component on a bar, by adding any keeper to the wax bar and casting, then including the TITANAX female using the bonding technique.

1. Prepare the bar wax up and chose the most appropriate plastic keeper. Use the angled plastic keepers in distal extremes of the bar, following the ridge of the bone. The plastic keeper can be adjusted in shape and size. The 0° keeper can be use in the body of the bar.
2. Include the plastic keeper in the bar wax-up
3. Invest and cast.

4. Use the Bonding and Sandblasting Tool (ref-5051089-1) or the Paralleling Mandrel for Females (ref-5051046-1) to pick up the TITANAX female, and sandblast with coarse aluminium oxide.
5. Sandblast the inside of the female keeper as well.
6. Using the automix tip, apply Site B (ref-1041020-1) in the keeper, seat the TITANAX female and let it set for 10 minutes.
7. Remove any excess and clean.

4. Repairs

REPLACING AN AXIAL FEMALE RETAINED IN ACRYLIC RESIN

1- Identify the size of the attachment as M2 or M2.
2- Remove the female with a bur for acrylic and make space for the new female.
3- Make a perforation in lingual to permit the release of the acrylic resin excess.
4- In the mouth of the patient or in the model, place the corresponding space maintainer over the spring pin and assemble the new female.
5- Mix acrylic resin and place it in the denture and seat it.
If this step is done in the patient's mouth, prevent them from biting.
6- Remove the excess of material.
Check retention of the male. If necessary, follow the steps in the section "Removing / placing a spring pin of this document"

REPLACING A BONDED TITANIUM FEMALE

1- Identify the size of the attachment as M2 or M2.
2- Using a brand-new bur, cut out the female by making circular movements parallel to the wall.
3- Remove the SITE B material with a cylindrical bur.
4- The cavity must remain cylindrical.
5- Assemble the following parts according to the size of the attachment:
M2: Impression tool (ref-5011043) + male (ref-5051112) + space maintainer (ref-5051077) + female (ref-5051013).
M3: Impression tool (ref-5051110) + male (ref-5051111) + space maintainer (ref-5051076) + female (ref-5051018).
6- Ensure the female fits into the cavity and make corrections if necessary.
7- Clean both the cavity and the outside of the female.
8- Apply SITE B in the cavity and seat the female with the assembly of parts. Let it set for 10 minutes.
9- Clean any excess of material and remove the assemble components.

Relines and servicing

To check if a reline is required, place your fingers over the attachments while gently pressing on the free-end saddle. If you notice any hinging or movement, it indicates that a reline is needed.

IMPRESSION TAKING AND PRODUCING THE MASTER MODEL

1- Identify the size of the attachment as M2 or M2.
2- Assemble the following parts according to the size of the attachment:
M2: Impression tool (ref-5011043) + male (ref-5051112) + space maintainer (ref-5051077)
M3: Impression tool (ref-5051110) + male (ref-5051111) + space maintainer (ref-5051076)
Note: if the female is worn, use the oversized spring pins for impression taking.
3. Seat in the female in the mouth and block-out the undercuts and take impression.
4. Assemble the corresponding female analogue over the male: M2: (ref-5051092), M3 (ref-5051088).
5. Prepare the stone model.
6. Fit the RX paralleling mandrel (ref-5051046) on the female analogue and secure the path of insertion.

AXIAL PROSTHESIS

1- Check the retention of the spring pin.
2- Place a space maintainer M2 (ref-5051077) or M3 (ref-5051076) over the spring pin. Tip: Apply a bit of Vaseline on the space maintainer to help keeping it in place.
3- Place silicon stoppers in the retromolar area of the internal side of the prosthesis saddle. Seat the prosthesis in place while keeping the jaws in centric relation. Let the silicon set.
5- Take impression as usual and remove any excess.
6- In the laboratory assemble the following:
M2: Female analogue (ref-5051092) + male (ref-5051112) + space maintainer (ref-5051077)
M3: Female analogue (ref-5051088) + male (ref-5051111) + space maintainer (ref-5051076)
7- Seat in the female in the prosthesis and produce the master model.
8- Screw the spring pin or working dummy (M2 (ref-5051091) or M3 (ref-5051087)) in the retention part.
9- Place a large space maintainer M2 (ref-5011036) or M3 (ref-5051083).
10- Reline as usual.

PROSTHESIS WITH BONDED FEMALE

1- Check the retention of the spring pin.
2- Place a space maintainer M2 (ref-5051077) or M3 (ref-5051076) over the spring pin. Tip: Apply a bit of Vaseline on the space maintainer to help keeping it in place.
3- Place silicon stoppers in the retromolar area of the internal side of the prosthesis saddle. Seat the prosthesis in place while keeping the jaws in centric relation. Let the silicon set.
4- Block under the attachment with soft wax, take impression as usual and clean any excess.
5- In the laboratory, place the corresponding female analogue over the male, as:
M2: (ref-5051092), M3 (ref-5051088). Remember to also include the small space maintainer.
6- Produce the master model.
7- Reline as usual.

General Recommendations

- In case of previous shock of the prosthesis, it must be checked for any signs of fractures or cracks.
- Any element which is visibly altered or damaged (corrosion, breakage, cracks, etc.) must be immediately disposed.
- Products made from plastic through injection moulding may exhibit a slight change in coloration, but this does not affect their quality or characteristics.
- Handle with care during installation to avoid aspiration or ingestion by the patient.
- The impression tool must be carefully manipulated. To avoid surface scratching, it is recommended to screw this component by hand and avoid using tweezers, which could lead to plating deterioration and releasing of metallic particles.
- Assembly, disassembly, and maintenance of the prosthetic parts should be performed by properly trained professionals only and should be done with original instruments and components.
- Male and female components have to be separated before they are heated by means of soldering, cast-on, welding, etc. If several parts are involved these parts have to be fully dismantled before heating.
- It is important that the duplicating aids are not used as a temporary replacement in the patient's mouth.
- Before each use of the activating tool (ref-5051004) a visual check must be made to see if the activating tool exhibit any signs of corrosion or oxidation, or if the screwdriver's tightening recess is damaged, or the marking becomes illegible. If any of this is the case, it is highly advisable to stop using it.
- Patients should visit their dentist 3 months after installation and at regular 6-month intervals thereafter for a stability check of the attachments and tartar removal. Additionally, the dentist should assess the attachment's retention based on the patient's feedback.

Alloys and Materials

Metals
- IRAX: Au 60 - Pt 24 - Pd 15 - Ir 1 / Melting range: 1400-1460 °C
- NOPRAX: White - Cr 28 - Co (balance) - Mo 6 - others: Si, Mn / Melting range: 1355-1450 °C
- ORAX: Yellow - Au 67 - Ag 13.5 - Pt 8.5 - Cu 10.8 - Zn 0.2 / Melting range: 910-995 °C / Heat treatment: 60 min at 400 °C
- PALLAX - White - Au 2 - Ag 37 - Pt 9.5 - Pd 37 - Cu 12.5 Co 2 Melting range: 1055-1130 °C
- PLATIRAX: White – Pt 85 – Ir 15 – Other Ni, Be, Cd, Cr, Co / Melting range: 1790-1820 °C
- TITANAX: White - Ti 90 - Al 6 - V 4 / Melting point: 1650 °C
- STAINLESS STEEL 1.4598: Fe (balance)- Cr 16.96 – Ni 11.31 – Mo 2.05 – Cu 1.46 – Mn 1.87 – S 0.14 - C, Si, P, N
- STAINLESS STEEL 1.4310: Fe (balance) - Cr 18.02 – Ni 8.06 – Mo 0.21 – Mn, C, Si, P, S, N
- STAINLESS STEEL 1.4305: Fe (balance) – Cr 17.1 – Ni 8.05 – Mn 1.9 – C, Si, P, S, Cu, N, Co
- CrCo PHYNOX : Fe – Co 39.58 – Cr 19.86 – Ni 15.7 – Mo 7.26 – Mn 1.98 – C, Si, P, S, Be, W

Polymers
- POM Kepital
- PE Purell ACP

Others
- Wax with plastic filler

Swiss Made

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