The Esthetic Solution

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1. Recommended Procedure for Forming the ASTICS® Retainer

1.1 Formation of metal components

- Mark the vertical axis of the canine and premolar on the working model (Fig.1).

- Using a Bird Beak plier, make a 90° bend followed by a small loop on a standard Stainless Steel wire (Fig.2).

- Form a U-loop with a Loop Forming plier (Fig.4)

- Align the apex of the small loop along the vertical axis of the premolar. The mesial arm should reside about 1mm below the distal arm of the U-loop (Fig.3)

- Place the metal wire against the teeth and form it to fit the contour of the working model closely.

- For a wraparound design, continue to form the wire along the posterior teeth as required.

- For a soldered Hawley design, form the Adam’s Clasp and contour the wire to fit the working model.

- Mark the start of the mesial arm (Point ‘A’ on Fig.3) from the small loop

- Repeat the procedure on the other side of the working model. Place the formed metal components aside (Fig.4).
1.2 Formation of ASTICS® Labial Bow

- Use the flexible ruler provided to measure the length between the 2 markings of the start of the mesial arms made on the working model.

- Scrape 1mm off the teeth surface on working model where the ASTICS Labial bow is going to be formed to obtain a good fit.

- Cut out the required length of ASTICS® wire as determined above.

- Place the uncured ASTICS® wire on the working model. Secure it at its mid-length with a drop of sticky wax.

- Form the wire along its length to ensure a close fit. Maintain the position with drops of sticky wax (Fig.5).

- Secure the ends of the wire with sticky wax (Fig.6).

- Place the working model together with the wire into a Light Cure Chamber (refer to Section 2.0 for specifications).

- Allow it to cure for at least 1.5 minute.

- Remove the cured wire from the working model by means of steam or a heated scalpel (to melt the wax).

- Place the wire into the Light Cure Chamber for another minute.

- Remove the external sheath (Fig. 7)
1.3 Assembly of the ASTICS® Retainer

• Form the acrylic baseplate on the working model.

• Reposition the metal wire and cut the excess. If forming a soldered Hawley Retainer, solder the metal wire to the Adams Clasps.

• Polish the baseplate and the solder (Fig. 8).

• Apply separating medium on the canines and premolars

• Use hard sticky wax to block out the embrasure between the premolars and canines (Fig.9).

• Position the cured ASTICS wire on the stone model with sticky wax. Ensure the ends of the ASTICS wire is placed above the mesial arm and end before the small loop (Fig.10).

• Place sticky wax on the mesial side of the canine, up to 2mm before the vertical axis. Cover the ASTICS wire that is present as well. (Fig.10).

• Place sticky wax on the distal side of the premolar, from the apex of the small loop (Fig.10).

• Mix acrylic powder and monomer to a putty consistency.

• Form an acrylic tab between the two regions blocked with wax (Fig11).
• Cure the acrylic in a pressure pot or as advised by the manufacturer.

• Trim and polish the acrylic tab. Ensure there is at least 1 mm of acrylic above and below the ASTICs labial bow and the metal wire (Fig.12).

• Ensure the labial bow is not affected during the polishing

• Clean the finished appliance  (Fig.13 and 14)
1.4 Final quality check for the ASTICS® retainer

After the ASTICS® wire has been cured and the sheath removed, the wire should be inspected for the following:

1) Uniform translucency (hold the wire up against the light).
2) Inclusions (any visible specks within the wire).
3) Surface irregularities (scratches and bumps).
4) Whitening of the wire.

After the entire appliance has been completed, the following should be inspected:

1) The metal wire and ASTICS should be completely enclosed within the acrylic tab to ensure secure bonding.
2) The U-loops are properly tilted to be parallel to the labial surface of the molars.
3) The ASTICS® wire must sit steadily along the midline of the labial teeth and in-line with the distal arm of the U-loop

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2. Curing Guidelines

The ASTICS® wire cures at a wavelength of 475nm. Any light curing unit should be able to emit light of wavelength 475nm constantly. Hand-curing units may be used if exposure can be kept at a constant along the length of the wire.
3. Sheath Removal

The most convenient and inexpensive method of removing the ASTICS® sheath is by means of a pen-knife. This section highlights the proper and improper use of a pen-knife to remove the sheath from the cured ASTICS® wire.

3.1 Tools required
- Dark colored background
- Pen-knife

3.2 Proper use of pen-knife
- Place the cured wire on a dark colored background. Ensure that the blade of the pen-knife is extended to a length long enough to flex when being used. This will prevent undue pressure on the wire.

- Start by resting the blade on the wire a little away from one end. Angle the blade appropriately, about 45°. Make a slight cut into the sheath.

- After initial cut, ensure the blade is horizontal to the wire, while slicing the sheath.
• Continue slicing across the full length of the wire. The blade may be moved back and forth to ease slicing.

• Peel off the sheath from the end of the wire, making sure to peel section by section.

3.3 Improper use of pen-knife

• Do not attempt sheath removal with the sharp tip of the blade or hold the blade perpendicular to the wire and cut.

• Do not attempt sheath removal with the wire unsupported.
3.4 Final inspection

- Hold the wire up against bright light. The wire should appear defined without any stray “hairs”. If the wire has “hairs” (as depicted in the figure), this indicated that the wire was cut while removing the sheath. To avoid this from reoccurring, reduce the depth of cut while removing the sheath.

- The wire should also feel smooth to tough and appear glossy without any scratches. If there are scratches, it indicates that the wire came in contact with the blade during sheath removal. Reduce the depth of cut slightly.
4. Precautionary Measures to be Observed When Making the ASTICS® retainer

4.1 While handling ASTICS® wire

1) Do not make sharp bends on the uncured wire. This will compromise the performance of the wire.

2) Limit prolonged exposure of the uncured wire to heat and light while forming the labial bow.

3) Cut the uncured wire only with the provided edged cutter to prevent shearing of the wire.

4) Do not use sharp tip/edges to conform the uncured wire to teeth surfaces.

5) Do not use force to chip away the hardened sticky wax after the first round of curing.

6) Do not cut the cured wire. Grind gently using a fine grade silicon carbide paper to make any minor adjustments.

7) Do not scratch/damage the cured wire surface during sheath removal.

4.2 While assembling the ASTICS® retainer

1) All soldering and polishing of the baseplate and metal components must be completed before connecting the ASTICS® wire.