

CHAPTER 28

WORKSHOP 9: PLACEMENT OF FINISHING BENDS

Step-up, Step-down, Step-in, Step-out.

Step-up, Step-down bends are used to settle-in one or several teeth. In order to settle-in the bite correctly, large, rectangular NiTi wires (preferably a 19x25) should be used. These are softer and more forgiving than steel wires and the coupling effect of the rectangular wire assures settling-in with the proper crown/root torque. Because of this, lingual tipping of the crown is avoided as would occur when settling-in with small, round wires.

If Step pliers are used, steps can be quickly, efficiently and easily bent on NiTi wires, even HA NiTi. These pliers will not affect nor deform the overall arch shape while bending the wire.

There are available Step-pliers to make bends in various “step heights”. The most commonly used are 1 mm, .75 mm, .5 mm and .25 mm Step-pliers. A 3 mm step pliers is used for making an intrusion wire and for placing the mushroom bends for lingual wires.

To make steps, the wire should always be removed from the mouth. In this way one can assure the step bend is correct before replacing the wire in the brackets.

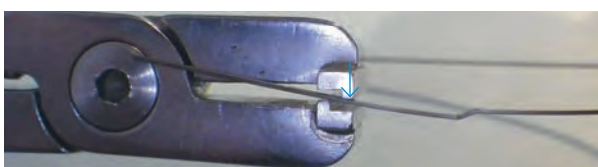
After a few practices, one becomes familiar with the correct orientation of the pliers in order to make the desired step bends. (see photos)

Pliers orientation to make a Step-down bend. 19x25 HA NiTi wire. Pliers are held in a parallel direction with the wire. ♦

.75 mm step.



Turn pliers 180° to complete the Step-down bend.



Completed .75 mm Step-down bend.



1 mm Step-down bend.



Turn the pliers 180° to complete the 1 mm Step-down bend.



Step-in/out bend is used for final finishing of the tooth position in the vestibular – lingual direction.

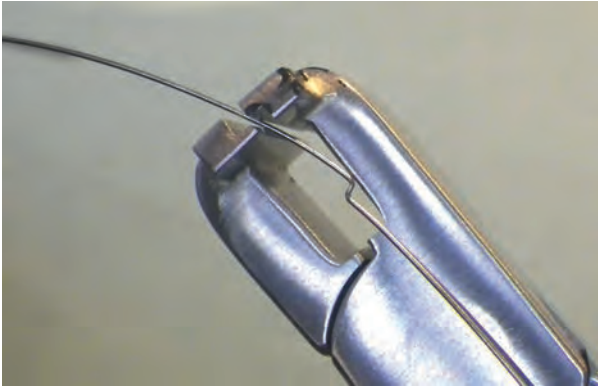
A round or square NiTi wire is preferable such as the 16, 16x16 or 18x18. However a 19x25 NiTi can be used.

The pliers are held at a 90° angle to the wire so that the bend is in the vestibular or lingual direction.

1. “Step-up type bend” being made

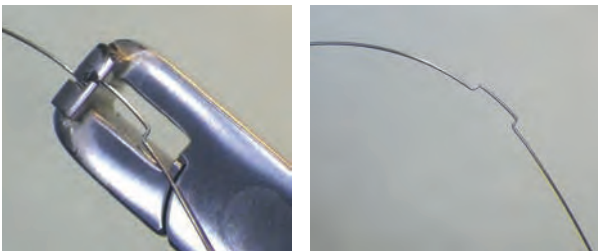


- The pliers are moved forward along the wire, flipped over, and a “step-down” type bend is made.



Completed 1 mm Step-out bend. ♡

“Step-down type bend” Final 1 mm Step-out bend ♡
being made ♡

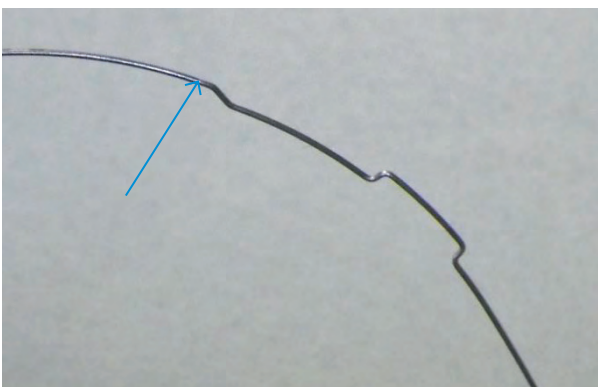


.75 mm “Step-out” bend being made

- make a “Step-up type bend”.

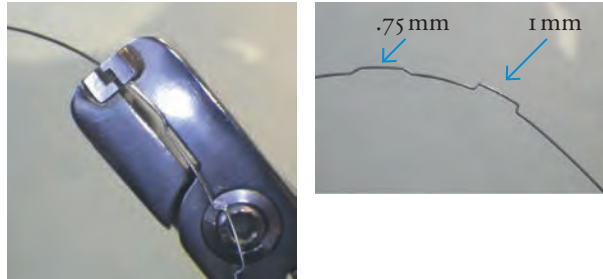


.75 mm Step-out bend



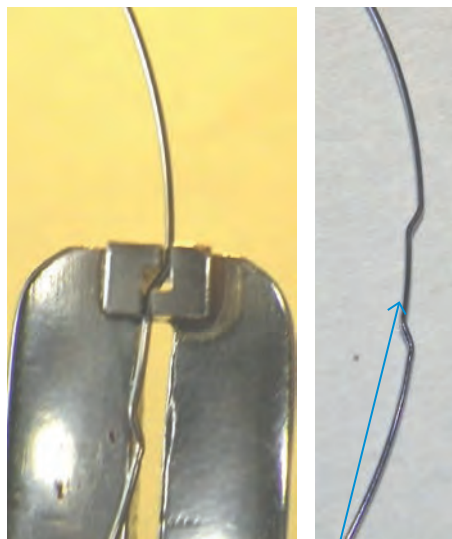
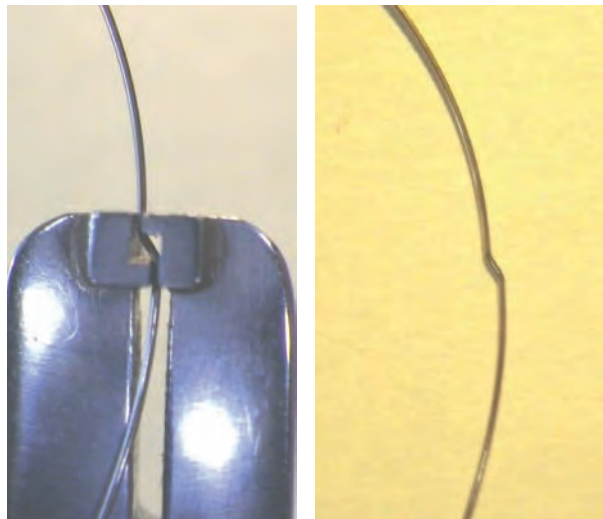
- The pliers are moved forward along the wire, flipped over, and a “step-down” type bend is made.

Final .75 mm and 1 mm Step-out bends.



Step-in bend: just reverses the order as seen for the Step-out bend.

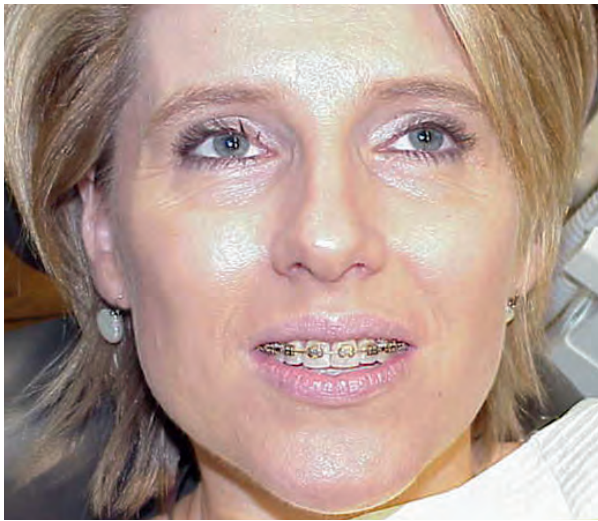
- Make a “Step-down type bend”.
- Advance the pliers and make a “Step-up type bend”.



Final .5 mm Step-in bend.

CHAPTER 29

PLACEMENT OF FIXED LINGUAL RETENTION, REMOVAL OF BRACKETS AND BANDS AND PLACING REMOVABLE HAWLEY RETAINERS

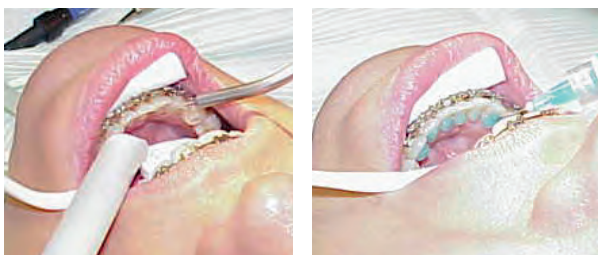


Retention: fixed lingual wire 3 to 3 or 4 to 4.

Clean lingual surfaces 3 to 3 or 4 to 4. ♥



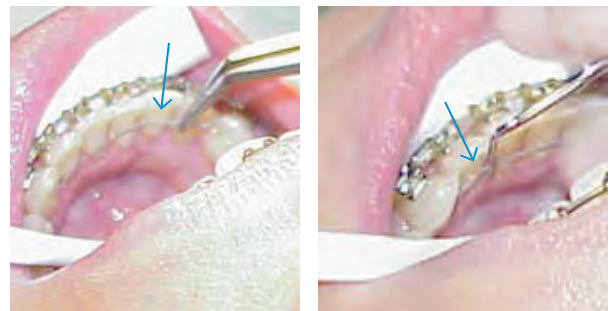
Rinse, dry, isolate and then etch the lingual surfaces. After 1 minute, rinse, dry and isolate for bonding.



Cut the “dead-soft wire” to the proper length. Bond the wire one tooth at a time to the lingual surfaces with a strong permanent light-cure composite.



Before placing the composite, the wire is contoured around each tooth using an instrument.



Contour/finish the composite (using a flat-end carbide bur). A “step” can be made on the incisal side of each piece of composite (using a flat-end carbide bur).



Wire should be on gingival 1/3 of teeth so that removable retainer can finish above the composite and then the acrylic of the removable retainer will rest on top of these steps in the composite.



Retainer wire prepared in the labo, to be placed “indirectly” using the placement “key” to orient the wire precisely.



Examples of fixed retainers from 3 to 3 using dead soft wire and composite. ♥



Fixed dead-soft retainer from 34 to 44: this is made from a periodontal splint “metal mesh” with composite. Result is a very flat retainer. ♥



Fixed wire retainer from 14 to 24 to hold extraction spaces closed. ♥



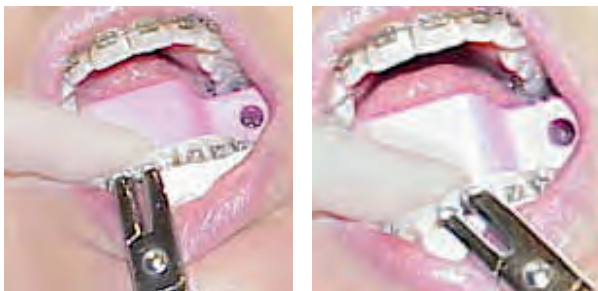
Fiber glass fixed retainer. ♥



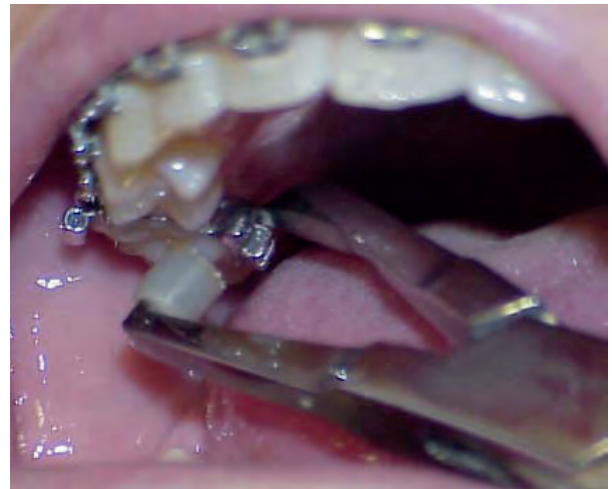
Remove brackets using bracket removing pliers.



For patient comfort, one can “support or stabilize” each tooth with a finger from the other hand.



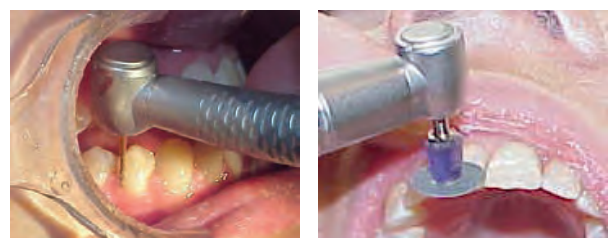
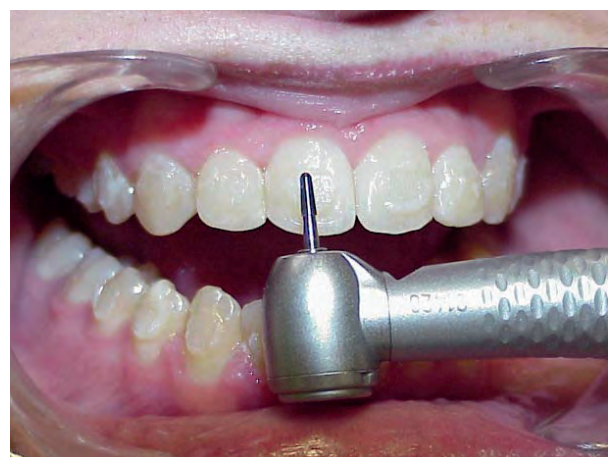
Remove bands using the band removing pliers. Engage the band, and then with the plastic part on the occlusal surface, squeeze the handles together which will break the cement bond – don't pull on the band.

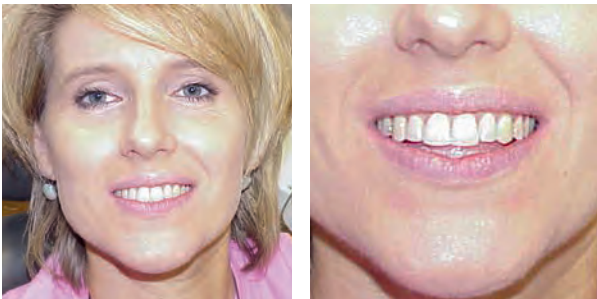


Finish: first remove the bulk of the composite with large diamond burs. Then using water, finishing burs and discs are used for finishing.



Then along with water, use finishing burs and discs.





Wrap-around Hawley retainers ♡

