

Clarity™ SL and SmartClip™ SL3 Self-Ligating Brackets

Archwire Insertion and Disengagement Instruments Technique Guide



3M Unitek

Recommended Archwire Insertion Instruments



SmartClip™ Appliance Wire Insertion
Hand Instrument
REF 804-152 .022 Bracket Instrument
REF 804-053 .018 Bracket Instrument



Weingart utility pliers can be used for feeding the wire through traditional tubes

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Archwire Insertion

Using the SmartClip™ Appliance Wire Insertion Instrument

■ Double torquing key end



Tip:

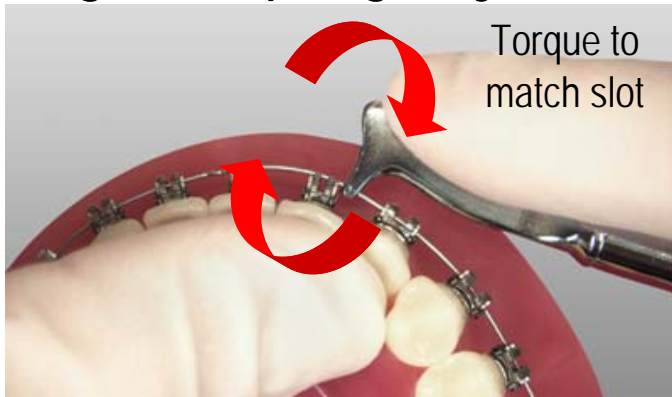
Consider using fingers instead of instruments on round and smaller rectangular wires. It may be easier to feel the force levels and the proper seating of the wire.

1. **Align** archwire over clip opening and bracket slot.
2. **Position** instrument on archwire so the torquing key straddles the bracket.
3. **Torque** rectangular wires by rolling the instrument until the wire torque matches the slot torque, which will allow the wire to naturally fall into place with little force.
4. **Guide** the torqued wire into the bracket slot gently while providing lingual support to the teeth.

Archwire Insertion

Using the SmartClip™ Appliance Wire Insertion Instrument

■ Single torquing key end



1. **Align** archwire over clip opening and bracket slot.
2. **Position** instrument on archwire on either mesial or distal side of bracket. Avoid applying pressure at the midpoint of the inter-bracket distance. Instead try to aim the single point as close to the rotation arm as possible without coming into contact with it.
3. **Torque** rectangular wires by rolling the instrument until the wire torque matches the slot torque, which will allow the wire to naturally fall into place with little force.
4. **Guide** the torqued wire into the bracket slot gently while providing lingual support to the teeth.

Archwire Insertion Procedural Tips

Procedural Tips

- 3M self-ligating brackets are designed to make wire insertion and disengagement quick and consistent.
- However, the incorrect technique could result in the following:
 1. *Debonded brackets*
 2. *Broken rotation arms*
 3. *Deformed archwires*
 4. *Patient discomfort*
 5. *Wire will not insert or disengage*
- The following slides will demonstrate the proper techniques to help avoid the aforementioned problems.

Archwire Insertion: Recommended Sequence

When inserting archwires it is important to follow the recommended insertion sequence.

■ Recommended Sequence

- 1) *Engage molar brackets or buccal tubes*
- 2) *Align the midline, but do not engage centrals*
- 3) *Then work from posterior to anterior*

■ Incorrect Sequence

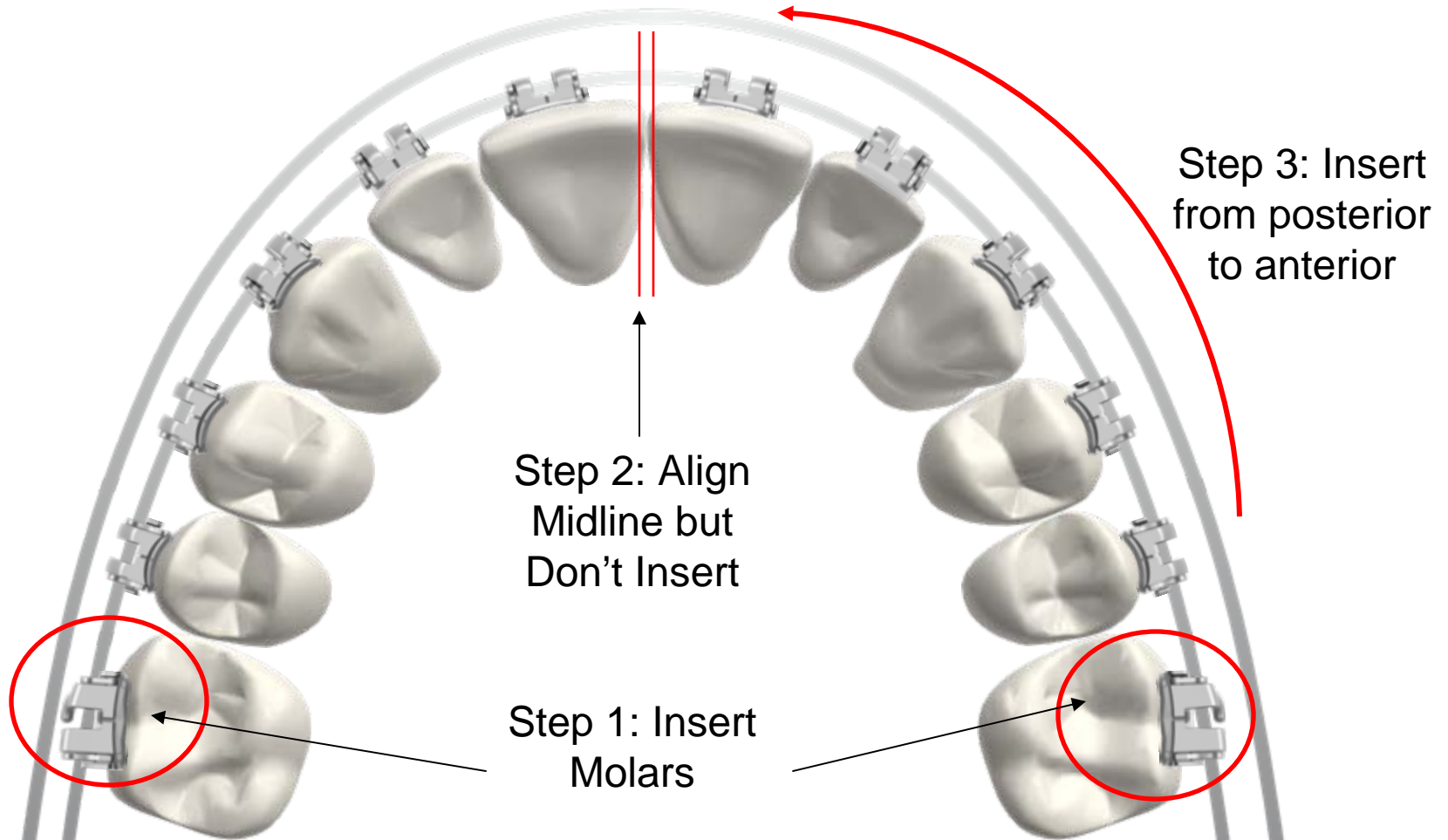
- *Anterior to posterior*

■ Potential Consequences

- *Deformed Archwires*
- *Patient Discomfort*

Archwire Insertion: Recommended Sequence

When inserting archwires it is important to follow the recommended sequence.



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Archwire Insertion: Lingual Support

When inserting archwires it is important to provide lingual support to optimize patient comfort, or have the patient bite down on a cotton roll.

- Correct Technique
 - *Regardless of insertion technique used, it is important to provide lingual support*
- Incorrect Technique
 - *No use of lingual support*
- Potential Consequences
 - *Patient discomfort*



Archwire Insertion: Slot Alignment

Before inserting large rectangular archwires it is important to make sure that the slots are aligned vertically.

■ Correct Technique

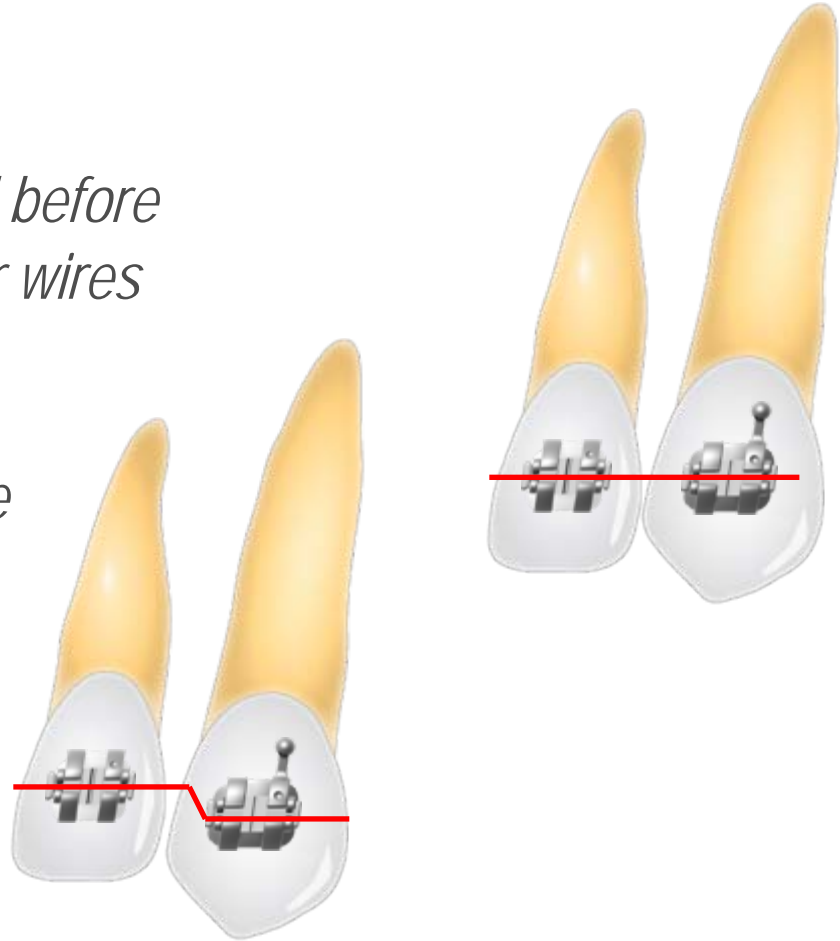
- *Make sure slots are aligned before moving to large, rectangular wires*

■ Incorrect Technique

- *Not leveling the teeth before inserting large wires*

■ Potential Consequences

- *Patient discomfort*
- *Wire will not engage*



Archwire Insertion: Instrument Positioning

Regardless of the insertion technique used, it is important to position the instrument correctly when inserting the archwire.

- Correct Positioning

- *Insertion instrument should straddle the mesial and distal aspects of the bracket*

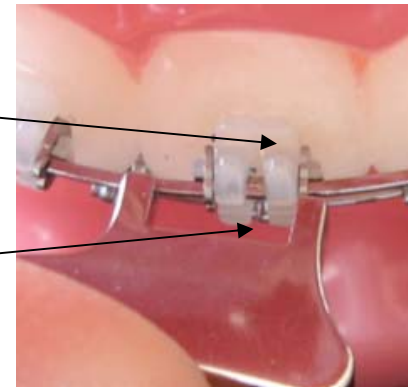


- Incorrect Positioning

- *Insertion instrument hits bracket, not wire*

- Potential Consequences

- *Broken Rotation Arms*



Archwire Insertion: Archwire Torque

When inserting rectangular archwires torque the wire to match the torque of the bracket. Most preprogrammed brackets have torque built-in. For example, an MBT™ Appliance System central bracket has 17 degrees of torque.

■ Correct Technique

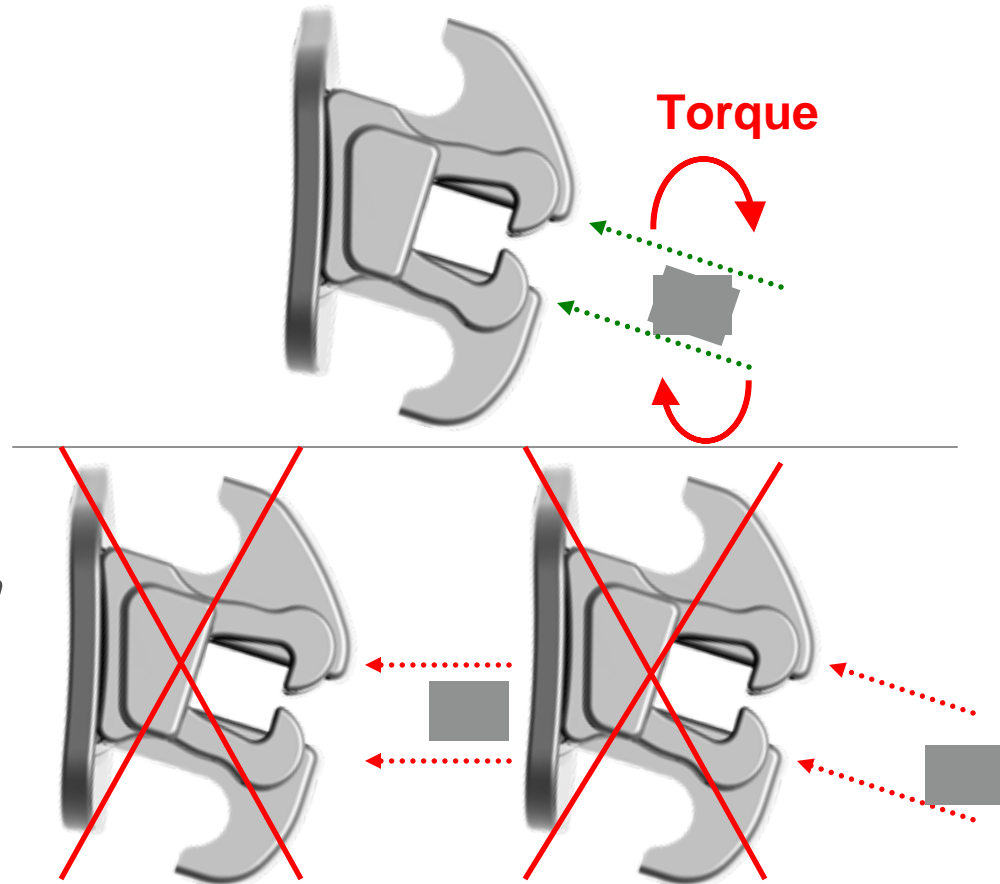
- *Gently torque large rectangular wires to match the torque and insertion path of the bracket*

■ Incorrect Technique

- *Not adding torque to the wire to match torque and insertion path of the bracket*

■ Potential Consequences

- *Patient discomfort*
- *Wire will not insert*



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Sensitive Patients

- For sensitive patients, have them bite down on a cotton roll to provide occlusal support



Archwire Disengagement Instructions for Use

Archwire Disengagement Instrument

Using the SmartClip™ Appliance Wire Disengagement Instrument REF 804-160

- Routinely check the disengagement instrument hook
 - *If there is significant “play” in the hook, tighten the screw that holds the hook mechanism in place before you proceed with the archwire disengagement*



Note: Tighten hook screw after each sterilization

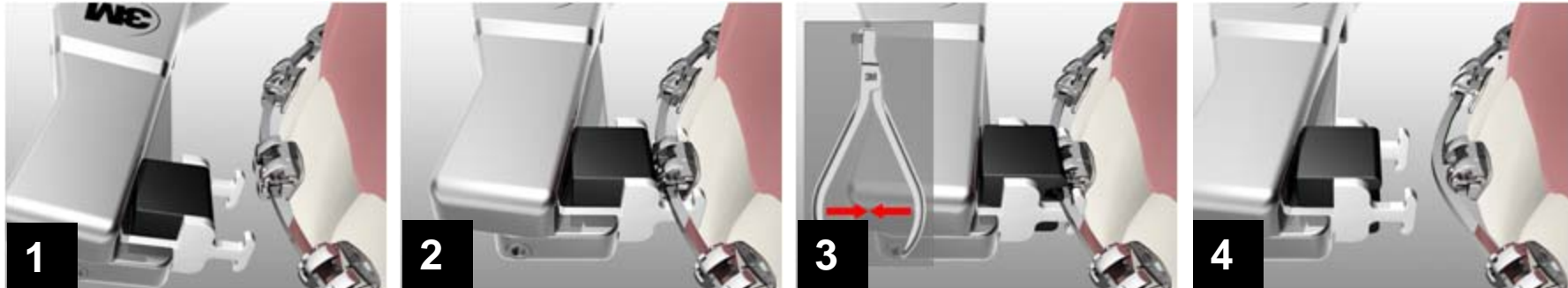
Prepare for Archwire Disengagement

- Remove any bendbacks distal to the molars
- For sensitive patients use a cotton roll
 - *Have the patient bite down on the cotton roll while using the disengagement instrument*
 - *Biting on the cotton roll provides occlusal support to the teeth*



Archwire Disengagement

Using the SmartClip™ Appliance Wire Disengagement Instrument



1. Approach archwire with disengagement instrument from occlusal or gingival side (it is recommended to work from the occlusal side whenever possible).

2. Place instrument hooks under archwire keeping the bracket between the instrument hooks, avoiding the mesial and distal protrusions and tie-wings.

3. Squeeze handles (Note: It is not necessary to fully squeeze the instrument. Only squeeze until the wire releases from the clips.)

Follow the recommended disengagement sequence in the following slides to help avoid archwire deformation.

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Archwire Disengagement Procedural Tips

Archwire Disengagement: Recommended Sequence

The recommended disengagement sequence is designed to optimize patient comfort and provide a dependable procedure.

- Tactics to optimize patient comfort:
 - *Lengthen inter-bracket distance*
 - *Reduce amount of deflection by utilizing inter-bracket distance*
 - *Distribute force to teeth best equipped to handle it*

Disengagement Sequence

It is important to follow the recommended sequence when disengaging the archwire.

■ Recommended Sequence:

- 1) *Upper right lateral*
- 2) *Upper left lateral*
- 3) *Upper right central*
- 4) *Upper left central*
- 5) *Upper cuspids*
- 6) *Upper bicuspid*

■ Incorrect Sequence

- *Starting in the posterior (i.e.. 4's, 5's, and 6's)*
- *Moving sequentially from tooth to tooth along the arch*

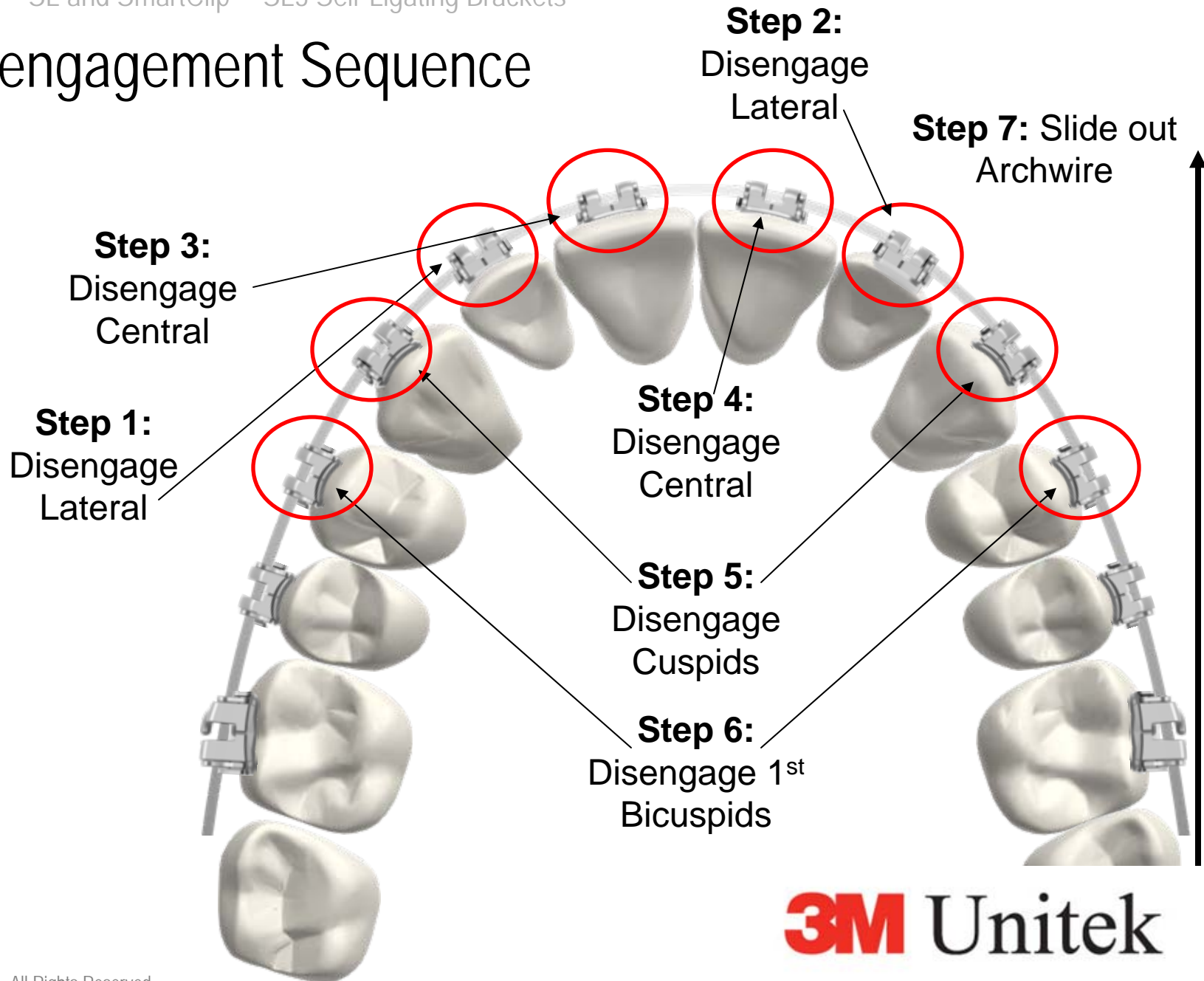
■ Potential Consequences

- *Patient discomfort*
- *Deformed archwire*

Please Note:

- It may be possible to slide out the wire from the posterior after disengaging the anterior.
- Adjacent brackets might release when disengaging large stainless steel wires.
- It is viable to start with any tooth mesial of the bicuspid, as long as lingual support is provided.

Disengagement Sequence



Disengagement: Lingual Support

It is important to provide lingual support when disengaging the archwire, or have the patient bite down on a cotton roll.

- Correct Technique
 - *Use lingual support as you disengage*
- Incorrect Technique
 - *No lingual support*
- Potential Consequences
 - *Patient discomfort*



Disengagement: Instrument Approach

It is important to use a vertical approach when seating the disengagement instrument on the bracket and the wire.

■ Correct Technique

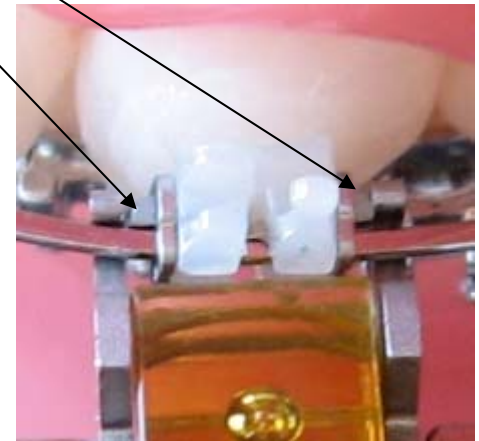
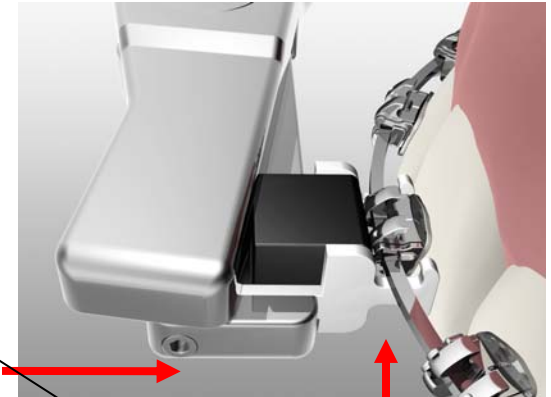
- *Vertical approach (occlusal or gingival side)*
- *Getting the hook to straddle the bracket and rotation arm*
- *Avoid the mesial and distal protrusions and tie-wings*

■ Incorrect Technique

- *Non-vertical approach*
- *Poorly seated disengagement instrument on the wire*

■ Potential Consequences

- *Broken rotation arms*
- *Debonded brackets*
- *Patient discomfort*
- *Wire will not disengage*



Disengagement: Instrument Hook Position

It is important to place the hook of the disengagement instrument precisely on the wire to avoid contact with the rotation arms and tie-wings.

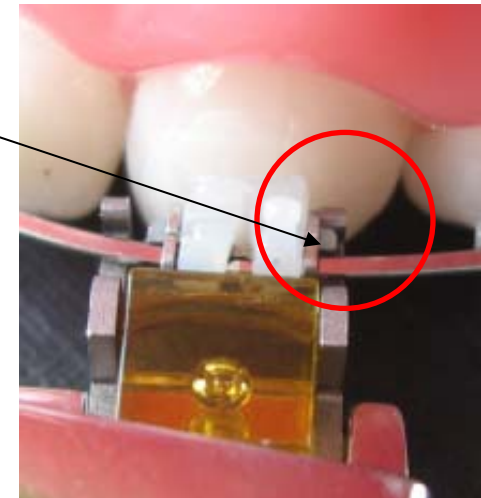
■ Correct Technique

- *Disengagement instrument hooks must straddle the bracket and rotation arm, avoiding the mesial and distal protrusions and tie-wings*



■ Incorrect Technique

- *Disengagement hook under rotation arm*
- *Disengagement hook under tie-wing*

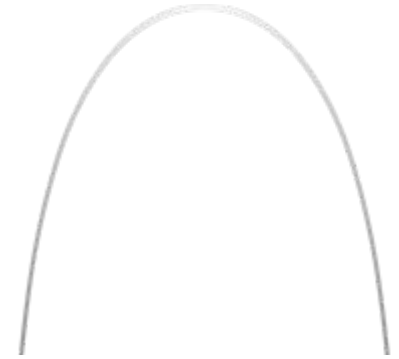


■ Potential Consequences

- *Broken rotation arms*
- *Broken tie-wings*
- *Debonded brackets*
- *Patient discomfort*

Disengagement: Light Round Wires

Light round wires may not disengage with the disengagement instrument.



■ Correct Technique

- *Use the disengagement instrument as directed*
- *If the round wire does not disengage with the instrument, cut the wire at the midline and slide it out*

■ Incorrect Technique

- *Using the disengagement instrument to “pull-out” light round wires*

■ Potential Consequences

- *Wire will not disengage*
- *Patient discomfort*
- *Deformed archwire*