

5 CASES OF OPENING BITES WITH THE TIP-EDGE BRACKET SYSTEM

WITH THE TIP-EDGE BRACKET SYSTEM

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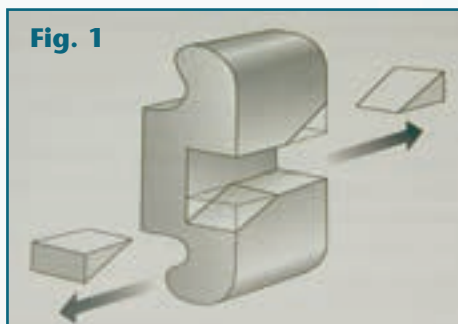


Fig. 1

The Tip-Edge bracket system is unique in that it has diagonally opposed corners removed, which allows a tooth to tip as the bite opens up. The standard bracket slot size of .022 x .028 open to .028 x .028 as a tooth tips. This feature can come in handy opening a bite with either stainless steel or reverse curve Niti wires, because the opening up of the brackets slot size causes less wire deflection. (Figs. 1, 2)



Fig. 2

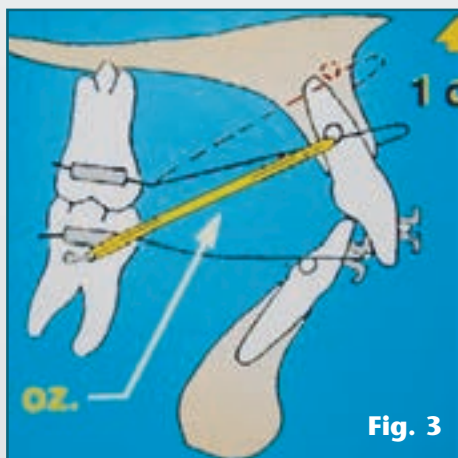


Fig. 3

The classic way of opening bites with the Tip-Edge system include: (Figs. 3, 4, 5)

- 1 Band the first molars.
- 2 Bracket only the anterior teeth.
- 3 Use an .016 stainless steel wire with bite opening bends placed 2 mm in front of the molar tube. The anterior portion of the wire should

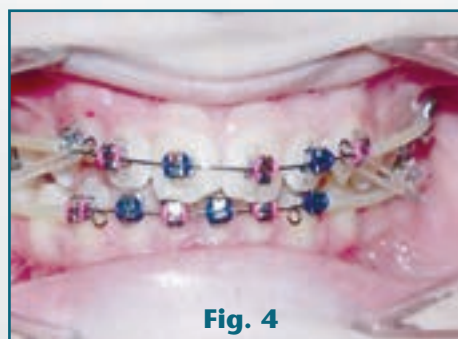


Fig. 4



Fig. 6

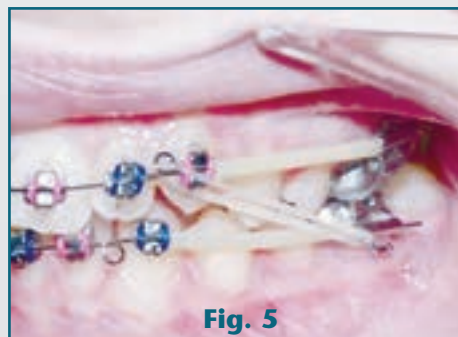


Fig. 5



Fig. 7

fall into the vestibule or lie about 22 mm apical of the incisal tips of the centrals.

- 4 A two-ounce elastic is worn to help keep the anterior teeth from flaring buccally.
- 5 If the front teeth are not straight enough to engage the stainless-steel wire into the bracket slot, a Niti wire can be piggybacked into the slot.

ALTERNATIVE TIP-EDGE TECHNIQUE FOR BITE OPENINGS

While the classic technique does work, there is an alternative technique for bite opening. I like this technique for doing Phase I of a mixed dentition case, because I can easily skip the deciduous molars. (see photos 6-7) However, I prefer opening bites using flat Niti wires and reverse-curve Niti wires in full adult dentition cases.

The advantages are easier to place wires and do not have to piggyback wires. There is no need to have to use molar bands; tubes will work. If wire comes out of molar tube or molar tube comes off, the wire normally does not poke the patient. Finally, the bite appears to open faster.

ALTERNATIVE TECHNIQUE

If a bad overbite exists at initial banding and bracketing, I will start the upper arch only. If a bad underbite exists at the initial banding and bracketing, I will start with the lower arch only. This is so the patient does not hit on the brackets as hard.

Next, level and align the arch with a flat .014 Niti wire. If more bite opening is needed, go to a .016 reverse curve Niti. If even more bite opening is needed, then you can go to an .020 reverse curve Niti. No elastics are used in this first phase.

The reverse curve Niti wire intrudes the anterior teeth and extrudes the posterior teeth with a light continuous force as

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opposed to a stainless steel wire with a bite-opening bend, which loses its force over time as the bend in the wire relaxes. (Figs. 8, 9) The following examples will demonstrate different bite opening techniques.

CASE 1 EXAMPLE

This particular case was treated by students during the 12-session hands-on orthodontic course in Austin, TX.

- 1 A Hispanic male with a Class I, model discrepancy of -6.5. The lower 1 to apo was -1.6 (ideal in this case is +4), this gives us a total discrepancy of -1.5. This indicates a non-extraction treatment. In addition, the patients’ facial profile was flat, so we do not want to take out teeth. There is also no room for the upper canines to erupt or the upper left lateral to come in- so this case will involve bite opening and proclining of teeth. (Fig. 10)



Fig. 8



Fig. 9

- 2 We started with upper braces only. Using an .016 ss wire with a mild sweep plus open coiled springs with lock nuts to procline and push the upper teeth out. Molar bands were used because I chose to procline the anterior teeth. Since the patient is in Class I could have used bondable tubes if I had not needed proclination. (Fig. 11)
- 3 Proclining created space, which was needed for the eruption of the blocked-out canines. (Fig. 12)



Fig. 10



Fig. 11



Fig. 12



- 4 After space was created, we placed an .014 niti wire to bring the canines in to the arch. (Fig 13)
- 5 Once the upper canines were in the arch, we placed lower brackets and leveled and aligned the lower teeth with an .014 niti wire. (Fig 14)
- 6 Now the lower teeth are out of the way and the bite is opened so we began engaging and pulling the Upper Left 2 into place using an .014 flat niti. We first bracket the lateral with a button, and then went to a bracket. (Fig 15)
- 7 Once the lateral and canines were aligned, we went to

finishing with .020 ss wires. (Fig. 16)

- 8 Braces were removed, but the torque of the laterals was still slightly off, so we later improved this with a spring aligner retainer. (Fig 17)

Post-op ceph shows that the lower 1 to apo is at a finished position of +3.3 (ideal +4). (Fig. 18)

CASE 2 EXAMPLE

This case involved an adult male who presented with a 100 percent over-closed bite and lower anterior crowding. His model discrepancy was -4, and he had a witts +6.1 (Class II skeletal). His total discrep-

“Now the lower teeth are out of the way and the bite is opened so we began engaging and pulling the Upper Left 2 into place using an .014 flat niti. We first bracket the lateral with a button, and then went to a bracket.”

ancy using the Tip-Edge diagnosis was +8 (indicating non-extraction) (Fig. 18)

- 1 The case was started with upper-bracketed teeth only, and a flat .014 niti wire to level and align the upper arch. (Fig 19)
- 2 We then switched to an .016 then an .020 reverse curve niti wire in order to intrude the upper front teeth.
- 3 After about three months more, room had developed in the lower arch allowing us to place lower brackets with an .014 flat niti to level and align the lower teeth. (Fig. 20)
- 4 We then went to an .016 reverse curve niti wire in the lower arch to finishing opening the bite.
- 5 The case was finished in an upper .021 x .028 braided wire and a lower .020 ss wire. (Fig. 21)



Fig. 18

- 6 No elastics or bite turbos were used in this case. Total treatment time was about 12 months. (Fig. 22)

CASE 3 EXAMPLE

This case involves an adult female who presented with maxillary and mandibular spacing and a 60 percent over closed bite (Fig. 23). Her model discrepancy was +2, and her Witts was +2.8 (skeletal Class I), and a total discrepancy of +8 dictated non-extraction treatment. The posterior crossbite will be left because the only way to correct it is through orthognathic surgery. (Fig. 23)

- 1 We started the case with upper and lower .014 flat niti wires to level and align teeth. A button was placed on the lower left 5 to unrotate it. I intentionally did not bracket the lower canines because the patient would have hit hard on the brackets. Once the bite is open, we will bracket these teeth. (Fig 24)
- 2 Two months later, we finished placing the lower brackets, and the upper arch went to an .016 reverse curve niti wire to open the bite. (Fig 25)



Fig. 19



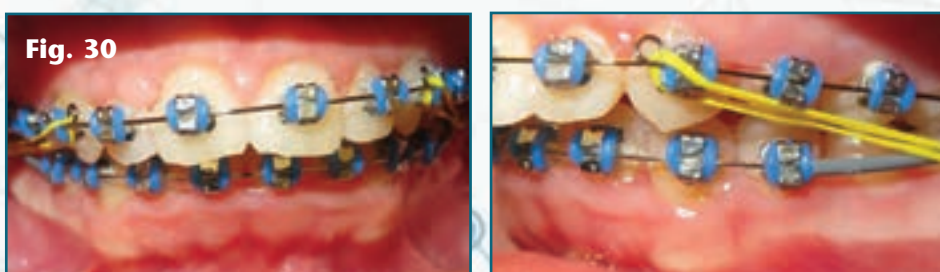
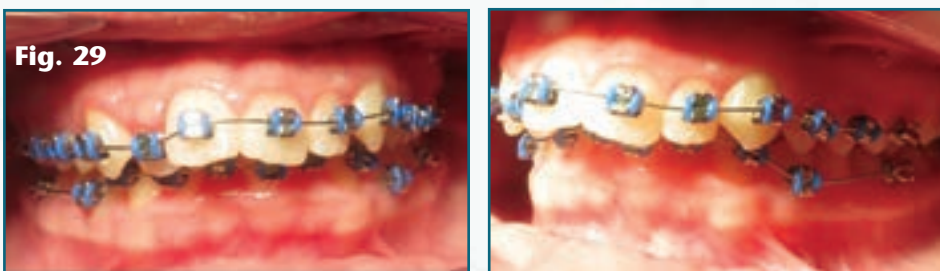
Fig. 20



Fig. 21



Fig. 22



“This case involves an adult female who presented with maxillary and mandibular spacing and a 60 percent over closed bite.”

- 3 Once the teeth were straight enough, we then went to .020 stainless steel wires and closed spaced with a power chain. (Fig 26)
- 4 When the case was finished, we reshaped the upper 1's (note how much better the abfraction areas look). (Fig. 27)

CASE 4 EXAMPLE

This case example involved a teenage male patient with a 100 percent overclosed bite as well as maxillary crowding and a large overjet. (Fig. 28) His model discrepancy was a -4 , and his Witts was $+6.1$ (Class II skeletal). A total discrepancy of $+8$ indicated this was a non-extraction case.

- 1 Since we had room between the upper and lower anteriors, we elected to start with both upper and lower bracketed teeth (could have started with upper only). Then .014 flat niti wires were used to level and align both arches. We intentionally did not bracket the lower 5's because the patient would have hit on bracket. (Fig. 29)
- 2 About three months later, we went to .016 stainless steel wires with mild sweeps and two-ounce Class II elastics

(could have used reverse curve niti, but decided to use stainless steel so that we could use the Class II elastics to improve the overjet). (Fig. 30)

- 3 We then placed upper and lower .020 stainless steel wires using four-ounce Class II elastics to continue improving the overjet. (Figs. 31-32)
- 4 We finished the case in upper .020 round stainless steel wire and lower .021 x .025 stainless steel wire. This wire was used to torque the lower anteriors facially to better improve the overjet. (Fig. 33)



CASE 5 EXAMPLE

This last case involves a teenage male with a Class III underbite. His model discrepancy was +2, and his Witts was -6.4 (Class III skeletal). His total discrepancy was +3.4 indicating a non-extraction case. (Fig. 34)

- 1 Treatment started in the lower arch only with a .016 reverse curve wire (not pictured). Since the arch was flat, we could start with this wire, which intruded the lower front teeth, thus making it easier to place upper brackets.
- 2 We then placed upper brackets and leveled the arch with an .014 niti wire. I often use straight wire brackets on the upper 1's when I need a lot of buccal torque introduced to these teeth. (Fig. 35)
- 3 We then proceeded to a lower .020 ss wire and had the patient wear Class III elastics while closing the lower space with a power chain. (Fig. 36)
- 4 We are still finishing this case with the treatment time so far, less than one year.



There are numerous techniques and bracket systems in the field of orthodontics. The treating dentist should pick the techniques that works the best for themselves and benefits their patients the most.