

# Philippe Self-Ligating Lingual Brackets

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In lingual orthodontics, 1st- and 3rd-order tooth movements are more complicated due to the variability of the lingual tooth anatomy. Torque control is also more difficult because of the reduced interbracket distance; even small variations in bracket height can have a considerable effect on torque. These factors have led to the development of various indirect bracket-transferring methods, such as TARG\* and CLASS.\*\*

Philippe self-ligating brackets\*\*\* (Fig. 1), on the other hand, can be bonded directly to the lingual tooth surfaces (Fig. 2). Because they do not have slots, only 1st- and 2nd-order movements are possible. Four types of Philippe brackets are available: a standard medium twin (the one we regularly use), a narrow single-wing

\*Ormco/"A" Company, 1717 W. Collins Ave., Orange, CA 92867.

\*\*Specialty Appliances, Inc., 1670 Oakbrook Drive #390, Norcross, GA 30093.

\*\*\*Forestadent USA, 2301 Weldon Parkway, St. Louis, MO 63146.

†Masel, 2701 Bartram Road, Bristol, PA 19007.

‡GAC International, Inc., 185 Oval Drive, Islandia, NY 11749.

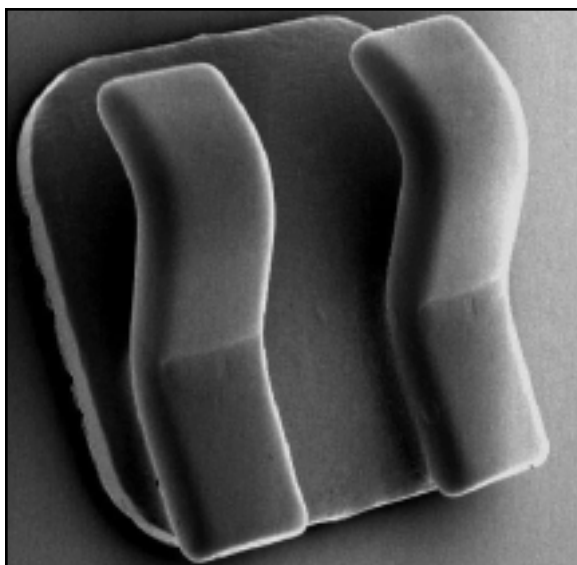


Fig. 1 Philippe lingual bracket.

bracket for lower incisors, a large twin, and a three-wing bracket for attachment of intermaxillary elastics and application of simple 3rd-order movements.

## Bonding Philippe Lingual Brackets

In the mandibular arch, a placement gauge can be used to mark the desired height from the incisal edge. In the maxillary arch, because of the more complex anatomy and limited visibility, we use a vacuum-formed soft sheet as a reference guide (Fig. 3). Bracket inclinations can be indicated on the tray by marking the long axes of the

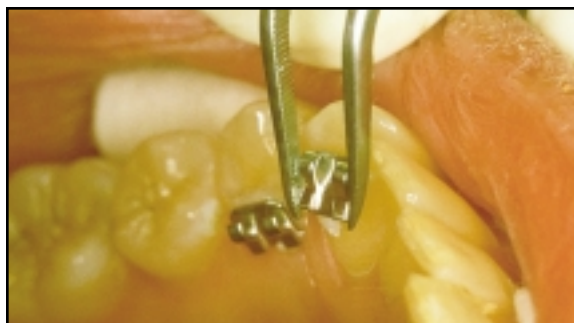


Fig. 2 Direct bonding of mandibular Philippe brackets.



Fig. 3 Vacuum-formed maxillary reference guide marked to indicate long axes of teeth.

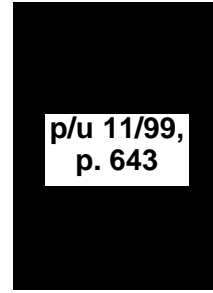
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teeth. This will allow the brackets to be placed at the correct height to avoid occlusal interferences from the overbite.

Full bonding is usually possible, but we more often use sectional archwires from cuspids to cuspids. The bracket wings are opened with a Haideman spatula that has been customized by thinning the ends with a grinder (Fig. 4). Brackets are easily closed with a Weingart utility plier; we suggest closing only one wing at a time to reduce the risk of accidental debonding. A cotton roll should be held against the labial surfaces of the teeth to keep the plier from slipping (Fig. 5).

The round wire sequence we normally use is .012"-.014"-.016" superelastic Elastinol† or TMA.\* The superelastic wires are particularly effective because they come in coils suitable for shaping with a heat-treatment device (Memory-Maker\*\*\* or Arch-Mate‡) to program their memory effect. We have also developed a

method for adding archform and simple bends without heat treatment, by overbending the wire while it is in its martensitic (cold) phase. If the wire is then gently heated with a flame, it will regain its austenitic phase, and the effective amount of bending can be checked.

Since the brackets are bonded to the lingual surfaces without a setup, the archform must be customized to the shape of the patient's dentition (Fig. 6). We have found it helpful to make tem-



Fig. 4 Opening bracket with customized Haideman spatula.

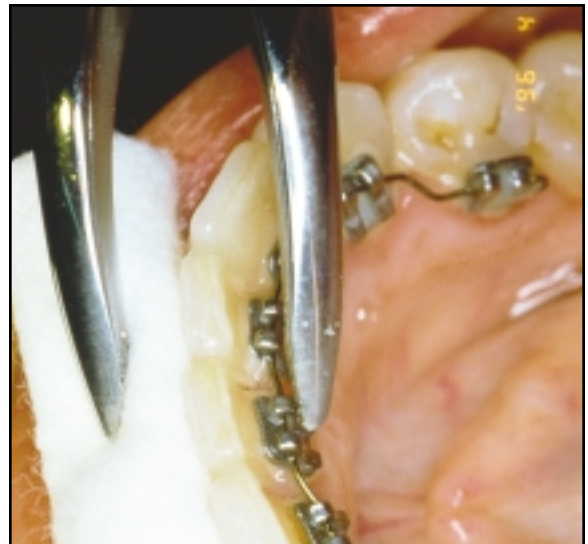


Fig. 5 Closing bracket wings with Weingart utility plier.

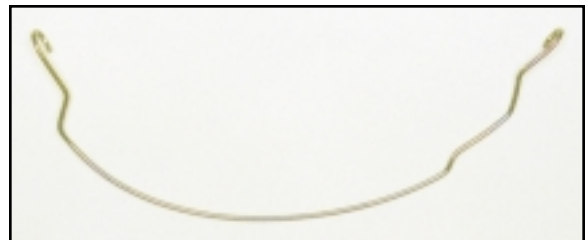


Fig. 6 Typical round nickel titanium wire customized to patient's archform.

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plates that fit the majority of cases. The distal ends of the archwires are bent into small circular loops, and we often add a small amount of light-cured composite for patient comfort.

### Clinical Applications

We recommend the Philippe lingual brackets-

ets for use in:

- Post-treatment retention (Fig. 7).
- Closure of minor spaces (Fig. 8).
- Limited intrusion (Fig. 8).
- Correction of simple tooth malalignments and mild crowding, especially in the mandibular arch (Fig. 9).



Fig. 7 Philippe lingual brackets used as bonded retainer.



Fig. 8 A. Limited space closure and intrusion of central incisors performed with closing loop on round nickel titanium archwire. B,C. Patient after treatment.

**Conclusion**

Lingual orthodontics demands special bio-mechanical expertise and technical skills such as indirect bracket positioning and customized arch bending. We believe Philippe brackets are a valid alternative to conventional lingual brackets in simple cases that do not require 3rd-order tooth movements. Once the clinician's familiarity with lingual techniques has improved, he or she will be able to treat more difficult cases with three-dimensional brackets and indirect bonding.

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**Fig. 9 A.** Patient with mild crowding. **B.** Philippe brackets and lingual archwire just before extraction of lower incisor. **C.** Patient at end of treatment, prior to bracket removal.