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IP Indian Journal of Orthodontics and Dentofacial Research

Journal homepage: https://www.ijodr.com/

Original Research Article

ASP lingual jig

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ARTICLE INFO

Article history:
Received 28-02-2022
Accepted 02-03-2022
Available online 31-03-2022

Keywords:
ASP lingual jig
Lingual orthodontics
Bonding
Lingual jigs

ABSTRACT

A lingual jig is a simple and accurate lingual bracket-positioning device, which transfers labial bracket prescriptions to the lingual brackets. Most commercially available lingual bracket bonding jigs either require multiple wires bending customized for each tooth in each patient or require multiple jigs for individual anterior teeth. This short communication describes ASP lingual jig that can be easily and accurately used for lingual bracket placement in every patient without any design modifications.

1. Introduction

There has been a marked increase in demand for discreet orthodontic treatment since the last decade. Lingual appliances provide ultimate esthetics by attaching brackets lingually.[1] However, the orthodontists are still hesitant to use lingual appliances due to the unique morphology of the lingual surface, wide range of buccolingual thickness of the teeth, smaller inter-bracket distances in the anterior region, and dependency on elaborate laboratory setups and bonding jigs.[1–3]

The lingual bracket placement systems like the TARG (Torque angulation reference guide) system, the slot machine, and the CLASS (Custom lingual appliance setup service) system, even though they are highly accurate, are time-consuming, costly, and requires specialized technical skills.[2]

This article describes ASP lingual jig, which can easily transfer labial bracket prescription to the lingual bracket. The ASP lingual jig has its concept derived from lingual jigs previously published or in commercial use.[2–4]

1.1. Armamentarium required

1. MBT (McLaughlin Bennett Trevisi) gauge of pole style with 4 in 1 gauge and without pivot joint (DB Ortho Ixion)[Figure 1]
2. 0.021″ × 0.025″ and 0.017″ × 0.025″ straight stainless steel (SS) wire
3. MBT prescription brackets of 0.022″ slot
4. Lingual brackets (0.018″ slot)
5. Metal scale
6. Red intraoral elastics (3/16″, 3.5oz)
7. Permanent glue (Fevi kwik).

1.2. Fabrication

1. Four sections of 0.021″ × 0.025″ SS straight wire, each of 2.5 mm in length, is bent in half rectangular shape according to the dimension of measuring edge of MBT gauge [Figures 2 and 3].
2. The half rectangular-shaped wires are capped on the measuring edges of the MBT gauge and permanently glued to it towards the ends of the wire [Figure 3]. The smaller dimension surface (0.021″ side) of the rectangular wire should be parallel to the measuring edge of the MBT gauge so that it could enter in the

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https://doi.org/10.18231/j.ijodr.2022.006

Fig. 1: Four in one MBT gauge of pole style without pivot joint (DB Ortho Ixion).

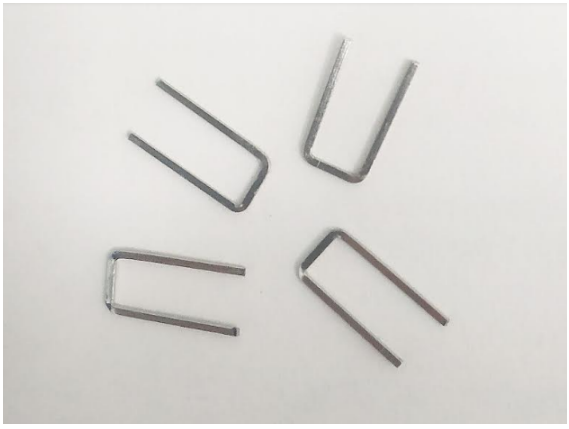

Fig. 2: Four sections of 0.021″ × 0.025″ SS straight wire bent in half rectangular shape.

Fig. 3: The half rectangular-shaped wires are capped and glued on the measuring edges of the MBT gauge.

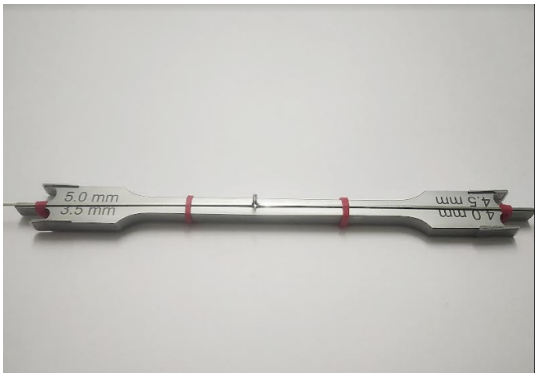

Fig. 4: The 0.017″ × 0.025″ straight SS wire with hook in middle is secured with red elastic at the four sites.

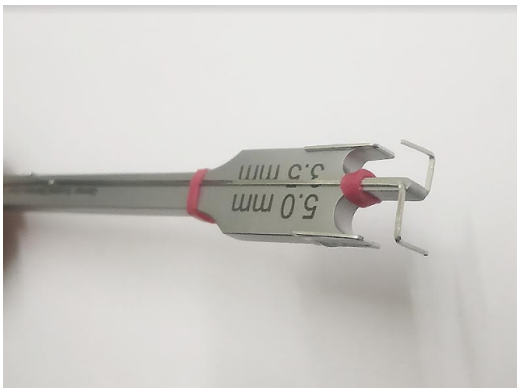

Fig. 5: An L-shaped perpendicular bends are made at both the sides of the long wires and forms the lingual arms of the jig, which enters the lingual bracket.

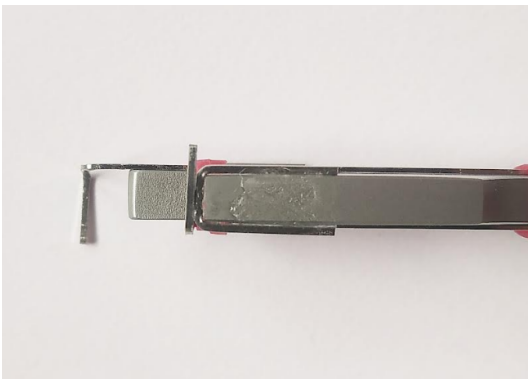

Fig. 6: The horizontal part of thelingual arms should be parallel and coinciding with their respective labial arms on both the sides.

Fig. 7: The ASP lingual jig completely fabricated.

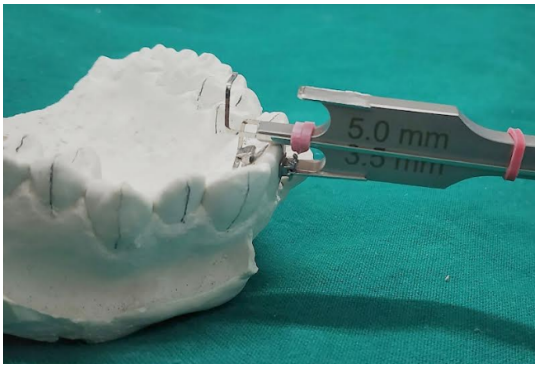

Fig. 8: The inner and outer arms engaged in the bracket slots with customised composite bracket base with labial torque incorporated.

0.022 slot bracket [Figure 3]. This forms the labial arm of the jig, which enters the labial bracket slot.

3. Two long sections of 0.017″ × 0.025″ straight stainless steel (SS) wire of 18 cm each are given perpendicular bends in the middle to form a 5 mm vertical loop with its legs abutting each other. It provides a grip and helps to glide the wire on the surface of the MBT gauge [Figure 4].
4. The wires are ligated to the broader flat surfaces of the MBT gauge with red elastics for stability and straight gliding path of the wire, as shown in the figure [Figure 4].
5. An L-shape bend is given at both sides of the long wires such that when it is slid and brought towards the labial arm, the horizontal part of the L-shaped bend should be parallel and coinciding with their respective labial arm on both sides[Figures 5 and 6]. This forms the lingual arm of the jig, which enters the lingual bracket.
6. Hence, the labial and lingual arms of four different vertical heights (i.e., 3.5mm, 4mm, 4.5mm, and 5mm) are available, which are in the same plane [Figure 7]. This allows the different vertical height selection for bonding brackets on long teeth with low cingulae or short crowns.

1.3. Method to use

1. MBT prescription brackets of 0.022″ slot are bonded on the labial surface of teeth on the patient's cast.
2. In-out positions of the lingual brackets are set by sliding and adjusting the jig in accordance to the tooth having the widest labiolingual width (usually canine) by measuring it with a metal scale. The jig is slid to the same distance for all the anterior teeth.
3. That size/side of the labial arm is selected, which will bring the lingual bracket in the desired vertical height position when the lingual arm is slid towards the lingual surface of the tooth [Figure 8].
4. When the labial arm is inserted into the labial bracket, the torque of labial bracket is transferred to the lingual bracket through the lingual arm of the jig.
5. As the labial and lingual arm of the jig are parallel and in the same plane, the slot angulation will be transferred as it is, in accordance with the concept of Euclidean parallelism.[3]

2. Limitations

1. It cannot be used in patients where the requirement of vertical height for the placement of bracket is more than 5mm or less than 3.5mm.
2. It is difficult to use or cannot be used in severe crowding cases.
3. Wires can distort with improper handling or storage.

3. Conclusion

The ASP lingual jig is a simple and accurate lingual bracket-positioning gauge that can be self-fabricated by a clinician.

4. Conflict of Interest

None.

5. Source of Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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Cite this article: Singh P, Ambekar A, Kangane S. ASP lingual jig. *IP Indian J Orthod Dentofacial Res* 2022;8(1):34-37.