

## A New Multi Purpose Jig in Orthodontics

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**Abstract :** Orthodontists have used a variety of hand-held dental instruments to position the brackets for direct bonding. A number of instruments, including the Boone and Dougherty gauges, have been used but the bracket can easily slip when the instrument is removed. Other gauges like MBT, ABJ, require multiple instruments for the same. Indirect bonding may be a solution, but it is time-consuming and does not provide for precise repositioning of bracket that fall off.

We have developed a multipurpose gauge that allow accurate, reproducible bracket placement with a sensitivity of 0.5mm.

**Keywords -** Bracket Positioning Gauge, Caliper, Metallic or Wooden jigs.

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### I. INTRODUCTION

Roth says, "At the heart of every excellent treatment result lies a well-placed appliance, regardless of the appliance that is used."<sup>1</sup> Many techniques have been described to improve bracket positioning<sup>2</sup> involving several different instruments<sup>3-5</sup> Although the Boone and Dougherty gauges have been widely used,<sup>2,3,6,7</sup> McLaughlin and Bennett have designed gauges to measure bracket heights according to their bracket placement chart.<sup>8</sup> Metallic or wooden jigs are available for bracket heights ranging from 2mm to 5.5mm from the incisal or occlusal edges, with each jig having a bracket placement gauge on each end. These are cumbersome to use, however, and have to be interchanged frequently during the bonding procedure, causing considerable loss of chairtime<sup>9</sup>.

One study demonstrated that the height and width of the crown can enhance or diminish the effect of angulation on arch length.<sup>10</sup> The vertical position of the brackets plays an important role because torquing is, a rotational movement around the center of the bracket slot. Bracket placement on the incisor crown is therefore a key to determining labiolingual crown inclination<sup>11</sup>.

A new multipurpose tool "KS Jig" has been designed for various clinical and non clinical uses.

### II. FABRICATION

KS jig was fabricated using:

- A. An brass caliper and
- B. Two brass strips

Brass strips were trimmed and modified for bracket placement and attached to the jaws of caliper with a soldering attachment.

Fig.1 showing KS jig.

### III. USES

- Single tool for clinical measurements intraoral as well as extraoral and model analysis.
- For bracket placement.
- To calculate the bracket placement height etc.
- For measurement of Overjet, overbite etc.
- In extraoral measurements of upper and lower facial height, lip length, width and length of nose, inter-commisural width etc.
- Measurements for model analysis -mesiodistal width of tooth, intercanine width, interpremolar width, intermolar width, incisor proclination etc.

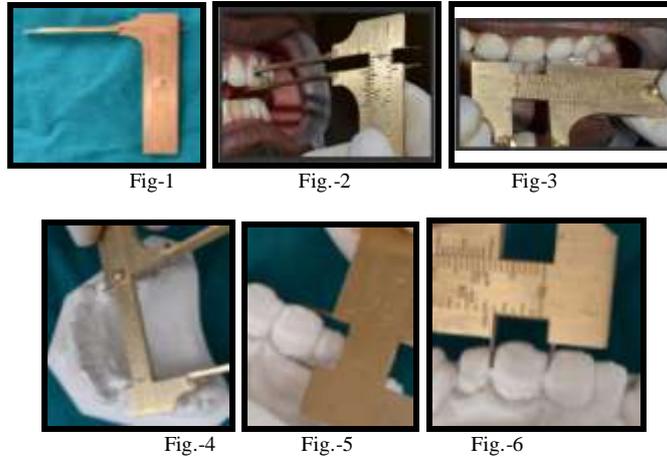
Fig. 2,3 showing clinical uses of KS jig and Fig.- 4,5,6 showing non-clinical uses of KS jig.

### IV. ADVANTAGES

- Multiple uses
- Accuracy up to 0.50mm
- Decreased armentarium- no need of multiple gauges
- Decreased chair side time

- Easy to fabricate
- Economical

## V. FIGURES



## VI. Conclusion

This multipurpose **KS jig** has emerged as single tool for several clinical as well as nonclinical measurements. It has incorporated several features henceforth reducing manual efforts, chairside time and errors. It can be used for intraoral as well as extra oral measurements. Also the device has cost effectiveness with less fabrication cost, and can be made easily available. It can be seen as futuristic approach to orthodontics and can be used in clinical practice with great ease.

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