

Multipurpose Jig for Welding, Bonding Molar Tubes and Rebonding Debonded Brackets

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Date of Submission: 26-08-2018

Date of acceptance: 06-09-2018

I. Introduction

It is often challenging to bond first molar tubes, as it confronts the clinicians manual dexterity due to poor accessibility. The solution for this aforementioned problem lies in indirect bonding, which requires additional laboratory procedure, and also uneconomical in nature. Also, if a molar tube has to be welded on to the bands, the clinician often makes an eye balling judgment during positioning of the tubes on to the molar bands, which might result in inaccurate positioning of the tube. Furthermore, every clinician faces a typical problem of debonding of brackets. It becomes more difficult to rebond a bracket, as it requires accuracy during rebonding of brackets, especially when the main arch wire is rectangular in dimension. Various clinical tips/technique/instruments¹⁻⁴ have been recommended in the past years to overcome these problems but most of them either expensive or they involve laborious procedures. Moreover, removal of any bracket holding jig could cause slippage of bracket while light curing, which would question the accuracy of the bracket sitting. Hence, we have devised a multipurpose, simple, and efficient way of bonding/welding molar tubes, as well as to rebond brackets with a single jig (FIGURE-1).

Fabrication of jig:

- 1) Tack weld 0.019x0.025" stainless steel wire perpendicular (FIGURE-2) to calibrated periodontal probe. For additional strength, solder the weld zone (FIGURE-3). Cut the ends approximately 5mm on either side.

Clinical application of the jig:

- 1) **For bonding of molar tubes:** Horizontally mark the position of the tube to be placed on the molar. Shove one end of the tube on to the horizontal rectangular wire, and position the tube on the tooth. Use the vertical arm of the jig(calibrated periodontal probe) to position the tube in vertical direction. The tube sitting will be more accurate because of the accessibility and the presence of the vertical arm, which will allow the clinician to bond the tube at the desired position.
- 2) **For welding molar tube on the band:** After placing the horizontal arm of the jig on the molar tube. Position the tube along with the band on the electrodes of the welding machine, and tack weld it. Since rectangular wire fits snugly into the rectangular slot, there will not be any rotational tendency of the molar tube while securing the molar tube on to the band. Hence, more accurately we can position and weld the tube on to the band.
- 3) **For rebonding the debonded brackets:** A slight modification in the jig design will help to rebond the bracket at the previous place. The length of the horizontal arms of the jig should be slight increased to engage in two adjacent bracket slots of the debonded bracket area. After marking the required position on the tooth. Place the jig, such that the horizontal wire engages into the adjacent bracket slots, light cure the debonded bracket with the jig in place. The same 0.019x0.025" stainless steel wire can be placed back in to all the slots and the retraction mechanics can be continued without wasting an appointment.

*Ortho Organizers, Inc.1822 Aston Avenue, Carlsbad, CA, USA.

References:

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FIGURES

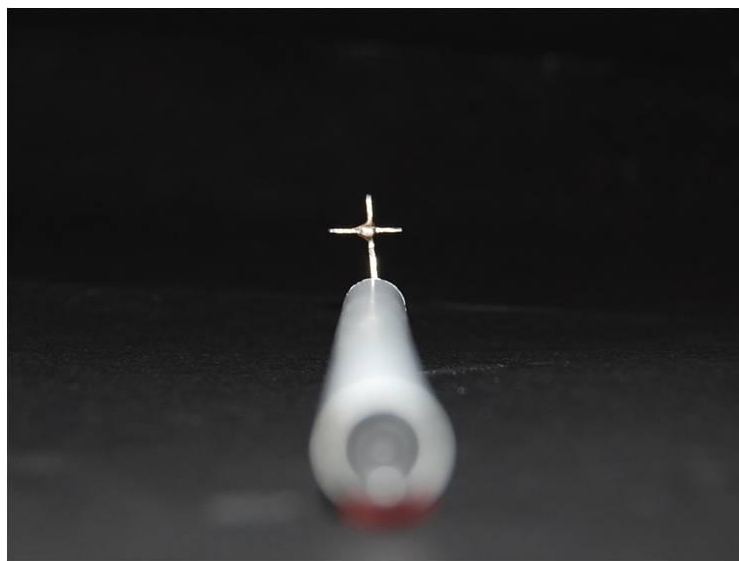


Figure-1: Multipurpose "R-Jig".



Figure-2: Tack weld two 0.019x0.025" stainless steel wires perpendicular to each other



Figure-3: Soldered wire



Figure-4: Incorporation of 90° bend into the wire



Figure-5: Embed one end of the wire into the acrylic tubing, so as to make a handle for the jig



Figure-6: Intraoral photograph showing marking on the molar



Figure-7: Intraoral photograph showing placement of bondable molar tube on to the molar with the help of jig

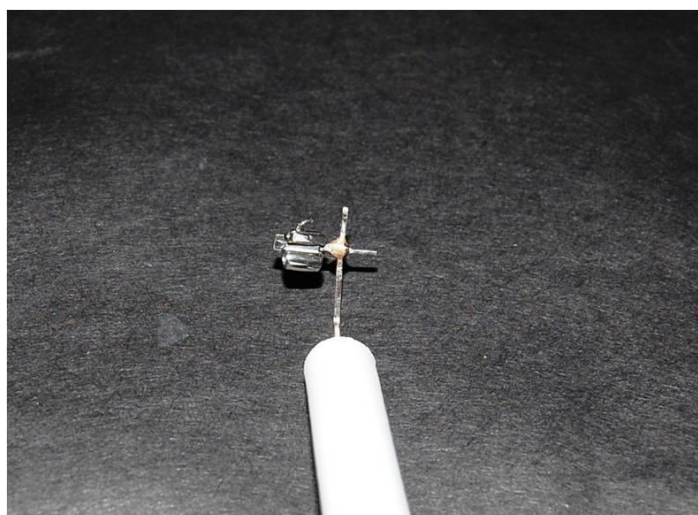


Figure-8: Securing weldable tube into the jig



Figure-9: Spot welding of molar tube on to the molar band with the help of jig



Figure-10: Intraoral photograph showing debonded bracket on the lateral incisor



Figure-11: Intraoral photograph showing orientation of recycled deboned bracket on to the lateral incisor



Figure-12: Intraoral photograph showing rebonded lateral incisor bracket.



Figure-13: Intraoral photograph showing placement of 0.019x0.025" stainless steel wire in all the bracket slots

1Dr. Praveen Kumar Prabhu " Multipurpose Jig for Welding, Bonding Molar Tubes and Rebonding Debonded Brackets."IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 17, no. 9, 2018, pp 24-29.