

TECHNIQUE CLINIC

Indirect Measurement of Archwire Circumference

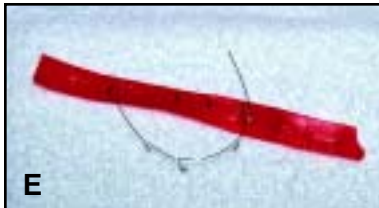
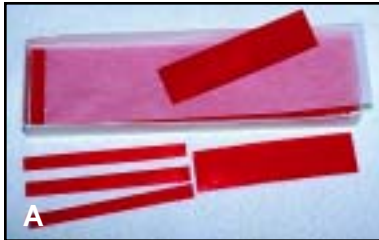
Nickel titanium archwires, with their superior flexibility and shape memory, have freed the orthodontist from the laborious and often frustrating chore of bending initial multilooped wires. Still, determining the proper length of the archwire remains a critical task, since a wire that extends beyond the terminal bracket can be a source of considerable irritation to the patient and a cause of emergency appointments.

Many methods of measuring arch circumference have been attempted, including direct measurement on the patient's casts and marking intended bends or loops on a flexible brass wire and then transferring these marks to the archwire of choice. These procedures tend to be tedious and time-consuming.

My office has developed a simple, accurate, and detailed indirect method of measuring the arch circumference as well as bracket positions, using thin strips of boxing wax* that are precut to appropriate sizes (A). The wax is soft enough for easy adaptation to both the dental arch and the brackets.

The assistant, after "eyeballing" the approximate curvature and length of the dental arch to be measured, pinches off one

*Modern Materials No. 94793, Heraeus Kulzer, Inc., 4315 S. Lafayette Blvd., South Bend, IN 46614.



end of a precut wax strip (B). We designate this pinched end as the right side of the arch. The assistant then fits the strip against the teeth (C) and gently presses the wax into each bracket, beginning at the midline and working distally. The midline is marked by indenting the incisal surface of the wax strip.

The wax strip is then carefully freed from the brackets, removed, and placed on the treatment tray. A suitable archwire is chosen, placed over the wax impression, and marked for cutting to the appropriate length (D). The midline and any bends or



loops needed in a stainless steel archwire are also marked.

The archwire can now be precisely oriented over the midline of the dentition with no risk of distal protrusion. We routinely heat-soften the distal 3-4mm of each archwire before placement; after ligation, we bend back the ends against the distolingual surfaces of the molars.

This simple technique allows an ideal archwire to be fabricated quickly outside the mouth, using even the most complex configurations (E), with minimal discomfort to the patient.

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