

Adjusting Essix Appliances at Chairside

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The Essix* appliance, first described in this journal in 1993,¹ is a removable plastic device that is practically invisible (Fig. 1), inexpensive, and quickly fabricated. It has minimal bulk and superior strength, is retained without clasps, and does not interfere with speech or function. When the patient follows instructions—to wear the appliance at night only, after a few days of full-time wear—the Essix has little, if any, effect on the efficiency of the occlusion.²⁻⁴

The Essix appliance is uniquely effective as a retainer because it encompasses all surfaces of the included teeth. Other applications include temporary bridges, appliances for minor tooth movements, stabilization for osseointegrated

*Registered trademark of Raintree Essix, Inc., 1069 S. Jefferson Davis Parkway, New Orleans, LA 70125.



Fig. 1 Esthetic appearance of Essix appliance.

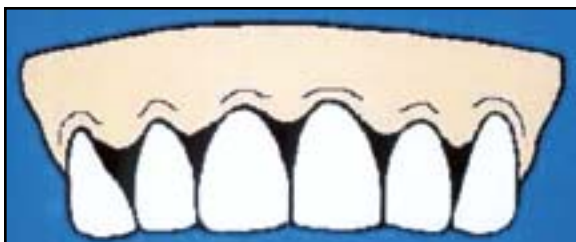


Fig. 2 Retentive undercuts gingival to contact points.

implants, and TMJ and bite splints.

A precision fit is essential in any Essix application—not only on initial placement, but as long as the appliance is worn. A well-fitting Essix appliance has two characteristics: it clicks into place, and it cannot be sucked off by the patient, since the negative pressure of the suction makes it adhere more tenaciously. The fit depends on the adaptation of the retentive undercuts gingival to the contact points (Fig. 2). If they are not well defined, the appliance will be too



Fig. 3 Undercut Enhancing Hilliard Thermopliers with hex-screw adjustment.



Fig. 4 APT II dental burner heating wedge end of Hilliard Thermopliers.

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loose; if they are excessive, it will be too tight.

An Essix appliance can be quickly adjusted at chairside simply by increasing or reducing the depth of the undercuts in the plastic. This will keep it at maximum efficiency without the need to fabricate a new appliance.

If the Appliance Is Too Loose

Hilliard Undercut Enhancing Thermopliers* (Fig. 3) can tighten any Essix appliance within 10 seconds; a hex-screw adjustment in the plier handle is used to precisely control the amount of adaptation. The technique is as follows:

1. Heat the wedge tip of the plier for four or five seconds in an APT II dental burner** (Fig. 4). (This time applies to types C and C+ Essix plastic; heating times vary slightly for types A and B.)
2. Verify the correct thermoforming temperature (200-215°F) with a Hakko digital thermometer*** (Fig. 5).

*Patent pending by Dr. Hilliard. Marketed by GAC International, Inc., 185 Oval Drive, Central Islip, NY 11722, and Raintree Essix, Inc., 1069 S. Jefferson Davis Parkway, New Orleans, LA 70125.

**Hager Worldwide, 12890 Automobile Blvd., Clearwater, FL 33762.

***EMSCO, division of Hammond Electronics, 1230 W. Central Blvd., Orlando, FL 32805.



Fig. 5 Hakko digital thermometer used to verify wedge temperature.

3. Squeeze the handles of the plier together to enhance a few of the undercuts gingival to the contact points (Fig. 6). This should tighten the fit of the appliance.

If the Appliance Is Too Tight

An Essix retainer should gently flex in and out of the gingival undercuts. If undue force is needed to remove the appliance, it is usually because the undercuts were not adequately blocked out on the working cast prior to thermoforming. Any tightness can be relieved by using a scalpel to cut off the tips of the plastic indentations, thus making the appliance easier to seat (Fig. 7). The undercuts should be altered one at a



Fig. 6 Hilliard Thermopliers used to reinforce retentive undercut gingival to contact point.



Fig. 7 Tightness relieved by reducing excessive interproximal plastic with scalpel.

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Fig. 8 Longitudinal cut made on facial side of appliance to allow full seating.

time, with a try-in after each adjustment, to avoid making the appliance too loose.

If the Appliance Will Not Seat Due to Minor Relapse (Essix Positioner Effect)

Slightly malaligned teeth can be repositioned without resorting to fixed appliances or fabricating a new Essix retainer. If the teeth have shifted slightly since impressions were taken, the appliance can usually still be seated, albeit somewhat awkwardly. The Essix plastic has enough resilience and flex-memory that it constantly tends to return to its original thermoformed state, thereby moving the teeth. However, the patient's cooperation is mandatory. The appliance must be worn full-time until the teeth have realigned and the retainer seats comfortably—generally within two or three weeks. At that point, the usual night-only regime can be resumed.

If the teeth have shifted so much that the appliance cannot be seated, it can be adjusted with a technique described in a previous article.⁵ A longitudinal cut is made in the plastic on the

facial side of the relapsed tooth, using a scissor or scalpel (Fig. 8). This provides enough flexibility for the retainer to be fully seated. Again, the patient must wear the appliance full-time until the teeth are realigned. A new Essix retainer can then be fabricated for nighttime wear.

If the Appliance Is Impinging on the Facial Gingivae

Occasionally an Essix appliance will impinge on the facial gingival tissue, causing it to blanch at the superior border of the plastic (Fig. 9A). In such a case, the appliance can be trimmed with a Mayo scissor to no more than 1mm of gingival height, rather than the customary 2-3mm (Fig. 9B). It should never be trimmed as far as the cervical margin, because that would eliminate the retentive capacity of the plastic undercuts.

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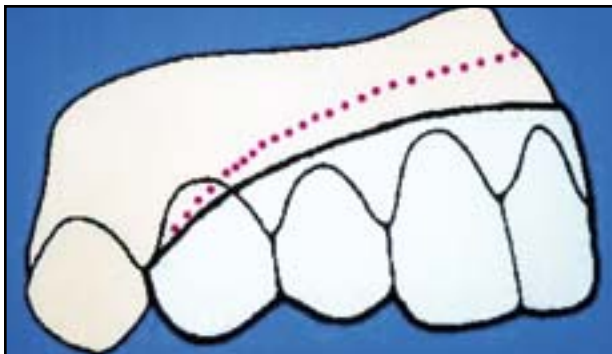


Fig. 9 A. Extended gingival border of Essix appliance causing blanched tissue. B. Gingival border (dotted line) reduced to 1-2mm above cervical line to relieve impingement.