



## Mouthguard Fabrication Technique

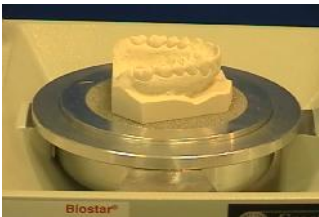
### Single & Dual Laminate Techniques

Safety glasses should be worn for all lab procedures as well as gloves when handling acrylics. Items featured in this technique are found on the last page.

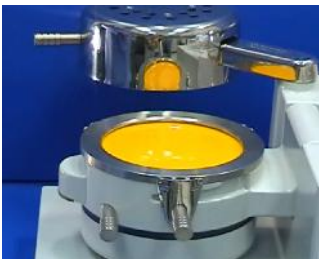
#### Single Laminate Technique



- 1 Apply liquid separator to all model surfaces that will come into contact with the formed material.



- 2 Place the platform on the inner cup lip of the Biostar or Ministar machine. Place the model in the center of the platform with the heel facing the open chamber on the left.



- 3 Secure a sheet of 3mm thick mouthguard material on the pressure chamber. Move the heating lamp over the material to start the heating cycle. Heat 3mm thick mouthguard or Bioplast material for 80-90 seconds (Biostar code: 234).



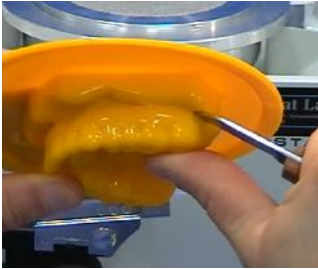
- 4 Once the heating cycle is complete, remove the lamp and swing the pressure chamber over the model on the platform. Rotate the locking handle to the front of the machine. Cool the formed material under pressure for 3 minutes.



- 5 Release the pressure and unlock the chamber. Release the material on the chamber by sliding the clamping frame arm to the left. Open the chamber. Remove the model with formed mouthguard material.



- 6 Rough-trim equipment including a lab knife and Blazer torch are used to cut away excess material. Heat the lab knife with Blazer torch.



- 7 With the hot lab knife, cut the formed material on the model facially along the vestibule and 3-5mm below the gingival margin on the lingual (palatal) side. Remove excess material after cut out is complete.



- 8 Remove the appliance from the model. Trim the appliance at the distal surface of the last tooth on each side of the arch (second molars) with #55 plate shears or a hot lab knife.

### Dual Laminate Technique

### Continue with Dual Laminate process or proceed to trimming procedure



- 9 Place the model with the formed material on the platform with the heel facing the open chamber on the left. Secure 1mm or 2mm clear Mouthguard material on chamber. Enter the heating time or code into the Biostar. Swing the lamp over the clamped material to begin the heating cycle.



- 10 Heat the previously-formed material on model with heat gun during final 30 seconds of heating clear material.



- 11 Prior to forming the materials, place reinforcement aids, nametag, and decals (if desired) on the material heated on the model about 5 seconds before swinging the chamber onto the platform. Once the heating cycle is complete, remove the lamp and swing the chamber over the model on the platform. Lock the chamber to begin the pressure molding process.

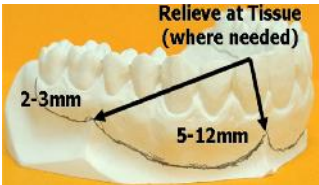


- 12 Let the material cool under pressure for 2 minutes.



- 13 Evacuate air pressure in chamber, unlock chamber and clamped material. Open chamber and remove formed material. Do not trim or remove material from model until cooled.

### Trimming Procedure



- Trim and finish the mouthguard following the Single Laminate procedure.***
- 14 Cut the mouthguard to its proper shape using #55 plate shears or a hot lab knife. The facial border should extend into the sulcus, reducing it to 3-5mm below the gingival margin around the first or second permanent molars. Reduce the material along the lingual (palatal) area to maintain a 1mm depth below the gingival margin.



- 15 A variety of trimming mandrels can be used on a dental lathe with a quick chuck system. A splash pan with adequate suction is recommended for all trimming procedures.



- 16 With an acrylic grinding stone on a high-speed dental lathe, detail the trimmed mouthguard borders to the references outlined in Step 14. Relieve facial soft tissue areas where muscle attachments are present.



- 17 Smooth all trimmed areas with a chamois buff or a high strength Roloc disc on high speed.



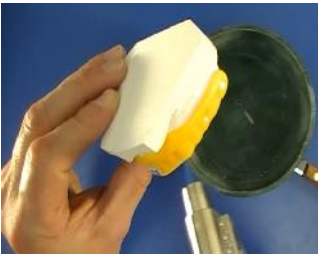
- 18 If a lathe is not available, a handpiece may be used to trim the mouthguard.



- 19 A carbide taper bur is used to trim the palatal and facial areas following the same protocol that was used during the lathe trimming procedure (outlined in Step 14)



- 20 A Dymo Wheel, a 1" chammois or satin buff is used to smooth trimmed surfaces. Use a medium speed on the lab handpiece with the finishing wheels.



- 21 The shine is recaptured by lightly flaming the surface of the dull material with a butane-soldering torch. Place the mouthguard on the model and re-shine the material by using the blue tip of the flame. Keep the flame setting low. Overheating will distort appliance.



- 22 After one or two applications with the butane torch, cool the mouthguard on the model in water. Repeat this process as necessary.



Finished mouthguard

**Items featured in technique:**

235-010 Astro Spec Safety Glasses (reg./blue)  
235-062 N-Dex Non-latex Gloves (Med)  
205-008 Great Lakes Model Trimmer  
060-025 Diamond Wheel for Single Wheel Trimmer  
215-016 Whipmix Orthodontic Stone  
215-020 Snap Stone  
075-004 Model Brush  
175-034 Liquid Separator  
075-007 Separator Brushes  
Mouthguard Materials  
030-025 Assorted Multi-Colored Bioplast  
080-006 Micro Torch  
080-009 Gas Refill  
170-004 Lab Knife  
1100-1200 watt Heat Gun (Home Depot/Lowes)

**Trimming & Finishing Items**

180-002 Lathe with Quick Chuck  
105-060 Handler Portovac  
105-061 Handle Portovac Replacement Filters  
086-019 Grinding Stone  
180-013 Lathe Mandrel for Stone  
180-003 Stone Truer  
086-001 Chamois Buff  
180-016 Threaded Lathe Mandrel  
150-025 Lab Handpiece  
145-008 Air Handpiece  
085-009 Carbide Taper Bur  
086-037 Miniature Satin Buff  
086-043 Dimo-Wheel  
220-023 No. 55 plate shears  
080-006 Micro Torch  
080-009 Gas Refill



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