

Waxing and carving

The polished surface, which will be in contact with the oral tissues, they developed by contouring the wax.

Waxing is the contouring of the wax base of trial denture into the desired form.

The form of polished surface of a denture influences its

1. Retention and stability of the denture.
2. Esthetic values of the denture: is not related to arrangement of teeth alone; we attempt to simulate natural anatomy of patient mouth which include size, shape, and contour of missing oral tissues during construction of complete dentures.
3. Tissue tolerance of the denture.

There are three principal surfaces concerned in functional stability of the denture:

1. The basal or impression surface.
2. The leverage position and occlusal surfaces of the teeth.
3. The location and form of the polished surfaces.

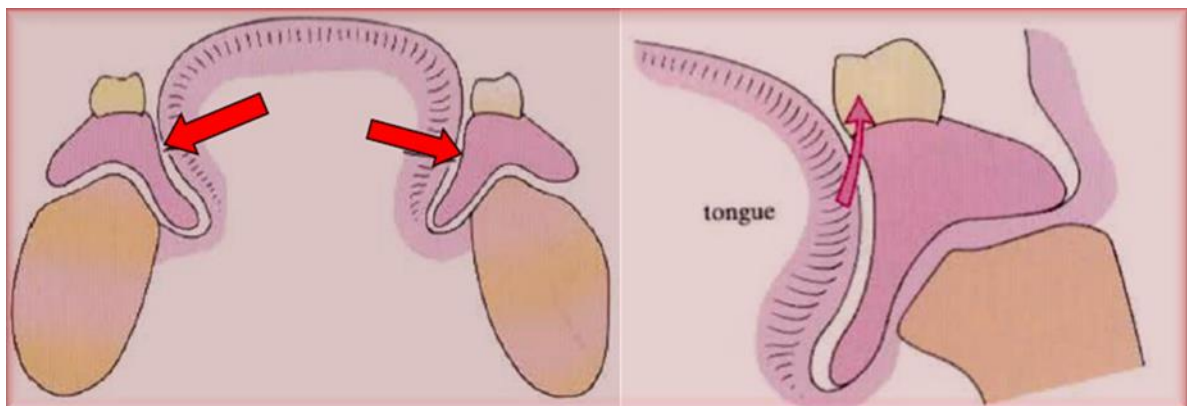
The polished surface is determined by:

1. The width of the border of the denture.
2. The buccolingual position of the teeth.
3. The fullness given to the wax to obtain convexity or concavity both facially and lingually.

The **inclined plane action** of the muscles of the cheek and tongue, this horizontal force exert in the direction of the occlusal plane by the tongue and cheek can act either a placing or displacing agent, depending on the shape of the polished surface.

When the lingual and buccal surfaces of a mandibular denture are being shaped, they can be made concave so that the tongue and cheek will grip and tend to seat the denture. In the opposite case where the lingual and the buccal surfaces are made convex by waxing and a narrow impression base used, the inclined plane forces resulting from pressures of the tongue and cheeks will tend to unseat the denture. The buccolingual position of the teeth is important because a buccal position of the teeth would necessitate shaping the surface of the denture base in such a manner that the muscle action of the cheeks would tend to unseat the mandibular denture. The buccal surface of the mandibular dentures in the first premolar region should be shaped carefully so as not to interfere with the action of the modiolus (connecting the facial muscles with the orbicularis oris). This connecting point of the muscles can displace the mandibular denture if the polished surface inclines toward the cheek, or if the arch in the premolar region is too wide.

The wax surfaces around the teeth are known as the (**art portion**) of the polished surface and should, for esthetic reasons, imitate the form of the tissue around the natural teeth. The upper part of the polished surface, known as the (**anatomical portion**), should be formed in such a way as to lose none of the original border width of the impression. The contours of the polished surface begin at the **gingival collars** of the prosthetic dentition.





Requirement of the waxing the polished surface:

1. They should duplicate the covered soft tissues as accurately as possible realistic, not exaggerated.
2. The borders, both labial and buccal should full the vestibules.
3. Notches should be provided to accommodate the mucous membrane attachment (frenum), both in size and direction.
4. The contour of the facial flanges should be compatible with the cheek and lips.
5. The contour of the lingual flanges should be compatible with the tongue.
6. The palatal section of the maxillary denture should be nearly a reproduction of the patient palate and rugae.
7. Avoid a bulky wax-up. The additional bulk of acrylic resin may contribute to porosity and dimensional processing error.

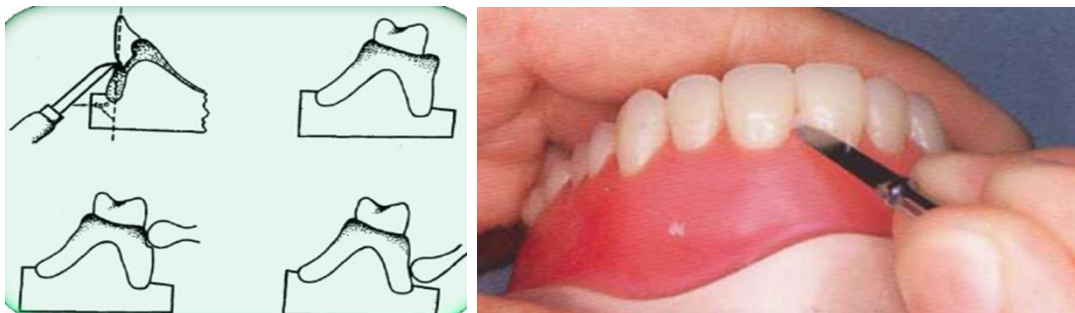
The procedure of waxing (festooning complete denture)

1. Contour the wax carefully to prevent movement of the teeth.
2. Place strips of base plate wax along the facial surface of the trial denture so that they extend from the gingival third of the teeth to the edge of the cast.
3. With a hot spatula lute the strips to the underlying wax at $1\frac{1}{4}$ inch intervals, and melt the wax into contact with the necks of the teeth.

4. After the wax has cooled, carve the interdental papilla.
 - a. The papilla must extend to the point of tooth contact for cleanliness.
 - b. The papilla must be of various lengths.
 - c. The papilla must be convex in all directions.
 - d. The papilla must be shaped according to the age of the patient.
 - e. The papilla must end near the labial face of the tooth, and never slope inward to terminate toward the lingual portion of the interproximal surface.



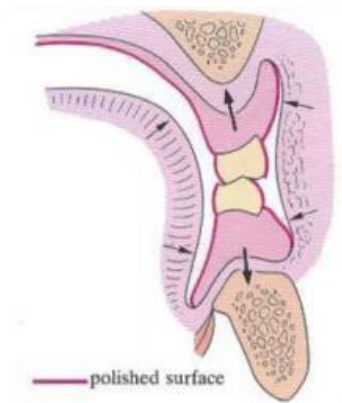
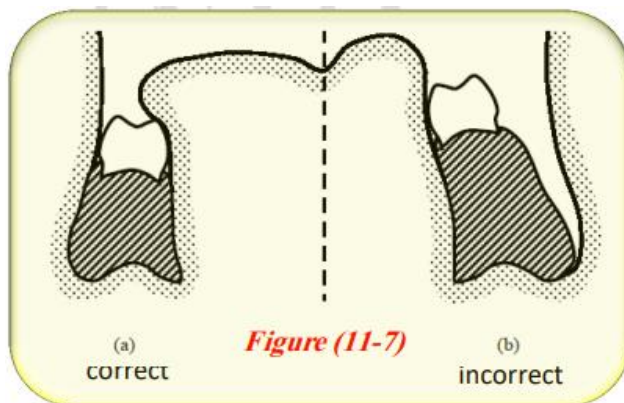
5. Developing the margin by carving with an ash no. 5 or Le'Crone carver at 45° angle to the neck of the teeth. The posterior area should have a marked fullness.



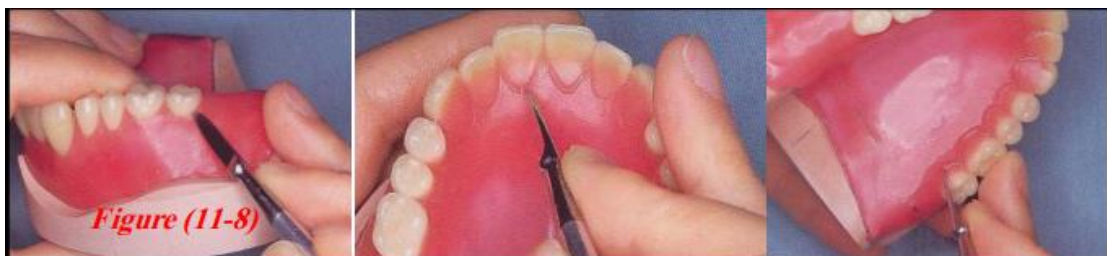
6. The ledges around the teeth are not contoured as roots of the teeth other way to wax buccal and labial surfaces to produce shallow grooves in the inter-radicular spaces. These grooves should not extend to the gingival margins which should be slightly raised in the interdental space to form the papilla.



7. Wax the lingual flange of the mandibular denture thickly enough to full all depressions and to slop down from the necks of the teeth and inward toward the tongue. The slope of the flange should be free from the undercuts and very slightly concave at or near the lower border.



8. Contour the wax around the necks of the maxillary posterior artificial teeth to form part of clinical crowns and to make these teeth more natural in size and more compatible to the tongue.

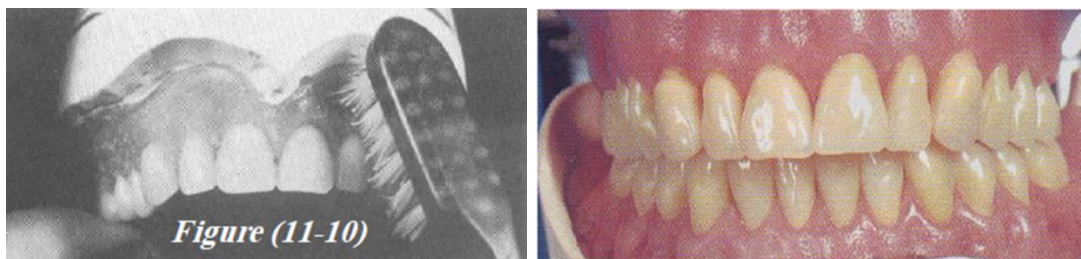


9. The palatal surface of maxillary denture should be waxed to a uniform thickness of 2.5 mm, when the processed resin is smoothed and polished, the palate will be as thin as possible and yet sufficiently thick to provide adequate strength.

10. After the wax has been contoured, smooth it by flaming.
11. Stippling of the wax: an alternative to gingival contouring some people stipple the wax and this produce a finished denture, whose surface shows an (**orange peel**) effect, produces a very pleasing result. This may be produced by tapping the surface of the wax with bristles of a tooth-brush after first warming the surface to soften the wax or by running over the surface of the wax with a small burnishing bur rotating in a hand-piece; and then polished it with wet cotton.



Disadvantage of stippling is that it produces a denture which is more liable to contamination by calculus deposits; if it done it should be confined to the area of the denture which can be seen when the patient grains broadly.



Establishing the posterior seal area:

It is the soft tissues along the junction of the hard and soft palates on which pressure within physiological limits of the tissues can be applied by a denture to aid in the retention of the denture. The posterior border of the denture is determined in the mouth and its location is transferred onto the cast. The locations of the right and left hamular notches are marked with an indelible pencil. Then the location of fovea palatinae near the median palatal suture is marked. The vibrating line (the posterior part of the posterior palatal seal area) normally used as a guide to the ideal posterior border of the denture, it may be slightly anterior to the fovea palatinae.

Procedure of the carving the posterior seal area:

A V-shaped groove (1-1.5 mm) depth is carved into the cast at the location of the bead. A large sharp scraper is used to carve it passing through the hamular notches and cross the palate of the cast. The groove will form a bead on the denture that provides a posterior palatal seal. The bead will be (1-1.5 mm) height and (1.5 mm) width at its base.

Advantage of posterior seal area:

1. It helps to determine the posterior border of the maxillary denture.
2. It helps to compensate for the shrinkage of the acrylic resin in this area during processing.
3. Provide a good seal in the posterior area of the maxillary arch which increase retention.
4. It prevents food to enter under the maxillary denture.
5. Reduces the tendency for gag reflex.

