

محاضرة (4)

الطقم الجزئي

Special tray (custom tray):-It is an impression tray made on diagnostic cast and is designed to make a more accurate and detailed impression .It is fabricated for a specific impression procedure for the patient and is discarded after use.



Requirement of special tray.

1. The custom tray should be 2 to 3 mm. thick with a stepped handle in the anterior region of the tray to facilitate removal from the mouth.
2. It is the supplied supported and control to the impression material (rigid).
3. The buccal and labial flanges of the custom tray have been adjusted and the posterior palatal border is checked. the tray contains both hamular notches. Extend approximately 2 mm. posterior to the vibrating line.

Advantage of special tray:--

1. It is more accurately in record details and obtain impression.
2. Working with special tray is easier and quicker than modifying stock

tray.

3. More comfortable and less bulky than stock tray

-Material used for construction of special tray:-

1. Cold cure acrylic resin.

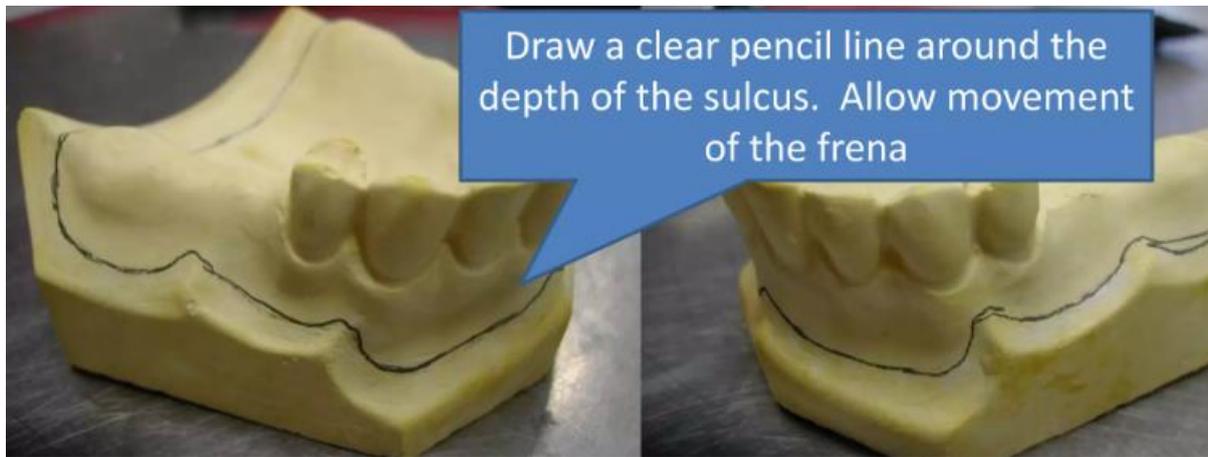


2. Visible light cured acrylic resin (VLC).



Fabrication of Custom Tray (special tray)

1. Draw a clear pencil line around the depth of the sulcus. Allow movement of the frena.



2. 1st layer of baseplate wax over teeth, then 2nd layer of baseplate wax over teeth & edentulous areas
3. make sure eliminate the undercuts area.

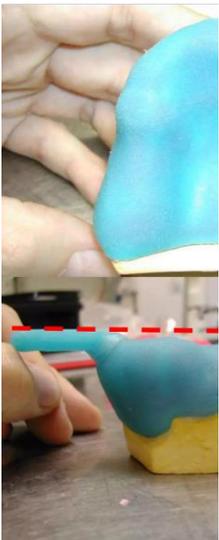


4. The thickness of wax should be the same, do not overheat.
5. Cut occlusal stops into wax to maintain space for impression material
6. occlusal stops = 2x2 mm square expose on the teeth surface, stabilize the tray



7. Adapt VLC material to cover wax.
8. Do not overly thin the VLC material over the teeth or the posterior border area.
9. Attach a handle by molding excess VLC material into the desired shape
10. Cure in VLC machine

11. While if use cold cure resin, The powder and liquid should be mixed in a mixing jar.
12. In the dough stage the material is kneaded in the hand, to achieve a homogenous mix. Then the material shaped into a 2 mm thick sheet either by plastic roll or by pressing the material between two glass slabs the two techniques need a separating medium.
13. After that the sheet of acrylic is adapted over the cast from the center to the periphery to prevent the formation of wrinkles. Then cut the excess material with blade before setting the material. Then the material should be held in position until complete polymerization. After that the excess dough material is used to handle fabrication.
14. Finishing procedure to create smooth borders and flanges of custom tray by acrylic and stone bur, then opening the labial, buccal and lingual frenium by fissure bur.



Base plate (record base, temporary base):-

A temporary form representing the base of a denture. Used for maxilla-mandibular (jaw) relation records, arranging artificial teeth or trial placement in the mouth.



Purposes of base plates are:-

1. To act as carriers for occlusal rim on which jaw relations are recorded.
2. It hold the teeth in the wax set-up for the try in stage.
3. Check the accuracy of previously recorded records.



Material used for making record base:-

1-cold cure acrylic resin (self-curing resin):-

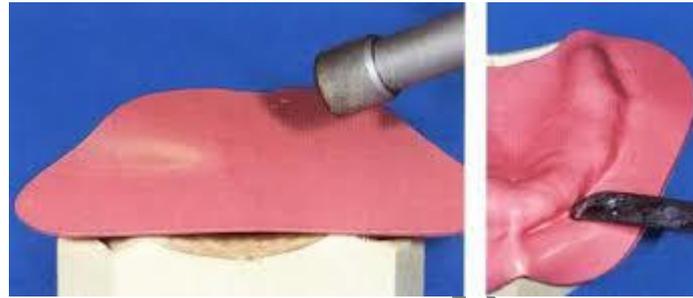
The materials used most frequently for base plates.

2-shellac base plates:-

The principal advantage is the minimal amount of time required to adapt and make them.



The disadvantage is the chance of losing their initial adaptation because of distortion during application.



3-wax base plate:-

Sheet of wax used for arranging teeth, waxing up, taking bit and quadrant checks. Medium soft is the most popular. It is easily softened and cooled, resulting in minimal shrinkage during set-up but their disadvantages not maintain their shape and easily distortion.



Occlusal rim (record rim, bite rim):-

An occluding surface built on temporary or permanent denture bases for the purpose of making maxilla-mandibular records and arranging teeth.



Surveying:

Is the determination of the relative parallelism of two or more surfaces of the teeth or other parts of the cast of the dental arch.

Survey:

Is the procedure of locating and determining the contour and position of the abutment teeth and localized structure before designing a removable partial denture.

**Objectives of surveying**

1. To identify the modifications of oral structures that are necessary to fabricate a removable partial denture that will have a successful prognosis. (Modification of tooth surface)
2. To accommodate placement of the parts of the partial denture in their designated ideal position on abutment teeth.
3. To develop the design and construction of a partial denture.
4. To parallel internal rests and intra-coronal retainers
5. To make the guiding plane surfaces of abutment restorations parallel.
6. To recontour abutment teeth on the diagnostic cast.
7. To Contouring wax patterns
8. To measure a specific depth of undercut

Aims of surveying

1. To design an R.P.D such that its rigid-flexible components are appropriately positioned to obtain good retention
2. To determine the path of insertion

3. To mark the height of contour of the tooth (survey lines)
4. To mark the undesirable undercuts into which the prosthesis should not extend.

Height of contour: circle line in the tooth at greatest circumferences at selective position

Undercut area: the portion in the tooth according to location, in the lingual side between the height of contour and gingival margin, while in the labial side at incisal edge.

Survey line: lines which draw on the cast by surveyor are making the greatest prominence of restoration, this line is drawn on the height of the contour of the tooth.

Guiding plane: Surfaces are parallel to the path of placement they may or may not face each other.

Parts of surveyor:

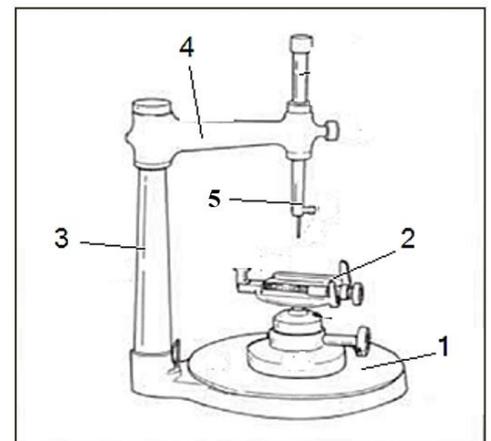
1. Surveyor platform It's a metal plate parallel to the floor where a cast holder can be placed, it forms the base.

2. Cast holder (surveying table) It's a stand placed over the surveying platform this stand has a base and table to place a cast.

- The cast can be locked in any position on the table with the help of a locking device the table is attached to the base with the help of a ball and socket joint.

- This joint also helps to tilt position and lock the surveying table in any required position.

3. Vertical arm It rises vertically from the surveying platform it supports the superstructure (horizontal arm and the surveying arm)



4. Horizontal arm

It extends horizontally from the top of the vertical arm.

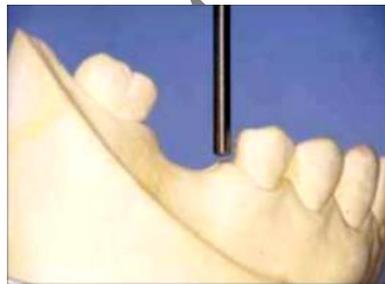
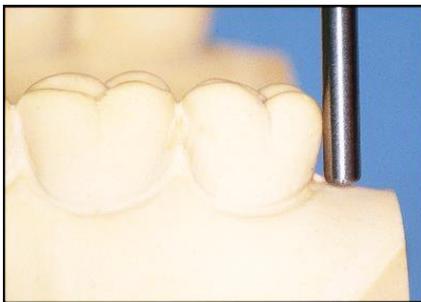
5. Mandrel: is used for holding special tools.

6. Surveying tools:

These tools attached to the mandrel of the surveyor are used for surveying. they are different types ex: analyzing rod, carbon marker, wax trimmer, and undercut gauges.

1) Analyzing rod

Is a rigid metal rod used for diagnostic purposes in the selection of the path of placement and used to determine the undercut areas before scribing the height of contour with the carbon marker.



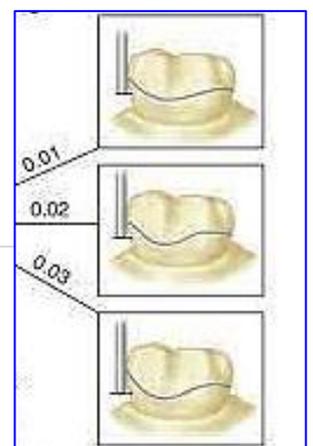
Carbon marker:

Is used for the actual marking of the surveyor lines on the cast.



3) Undercut gauge

Are used to measure the extent of the undercuts on the abutment teeth that are being used for clasp retention.



4) Wax trimmers:

Is used to trim excess that may be inserted into those undercut areas which are to obtain the proper form of the wax pattern.



- All of the areas below the height of contour is undercut in which the clasp tip must lie to provide retention for R.P.D.
- Other undercuts are undesirable (must be eliminated or blocked out).

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