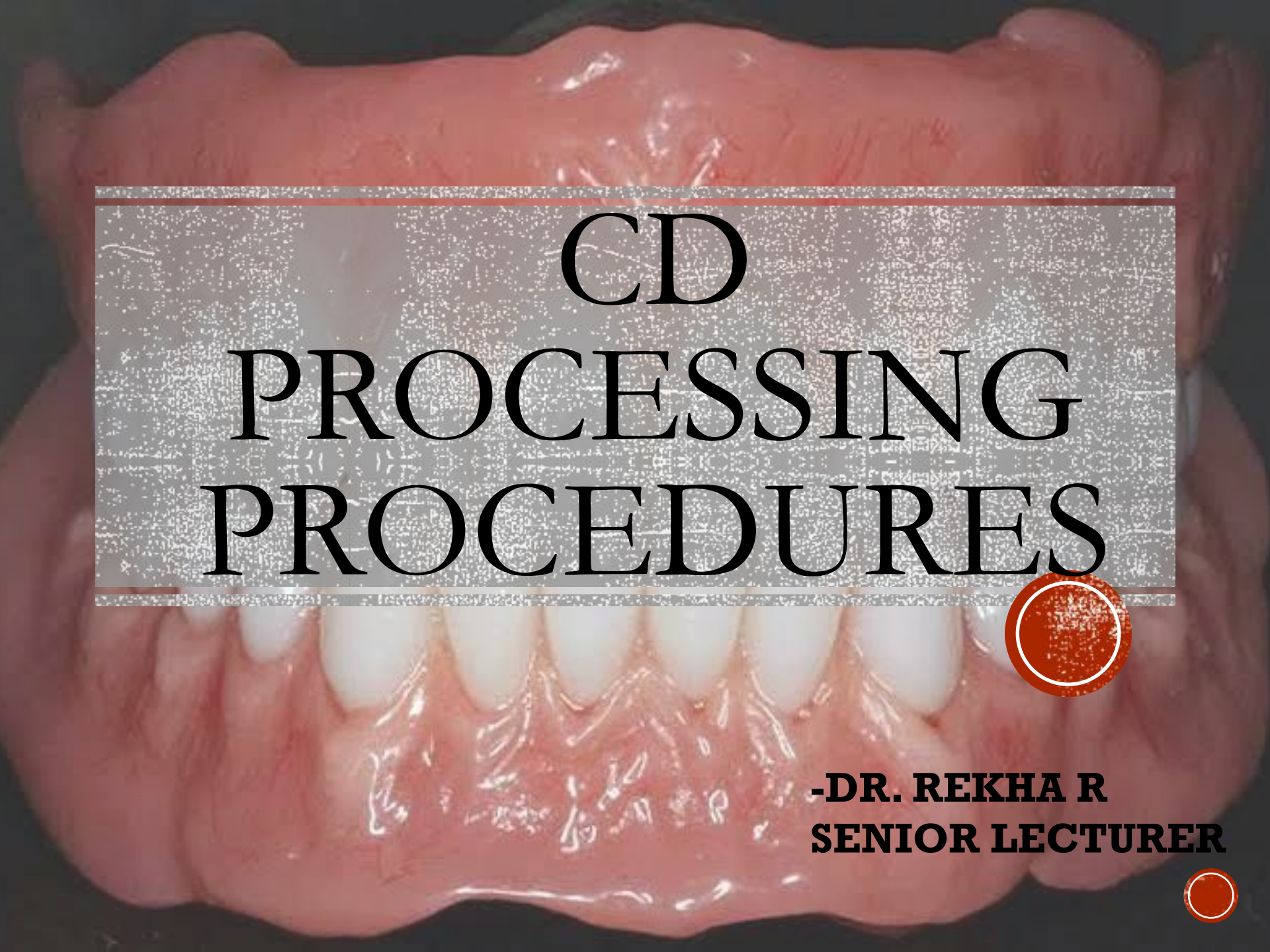


CD PROCESSING PROCEDURES

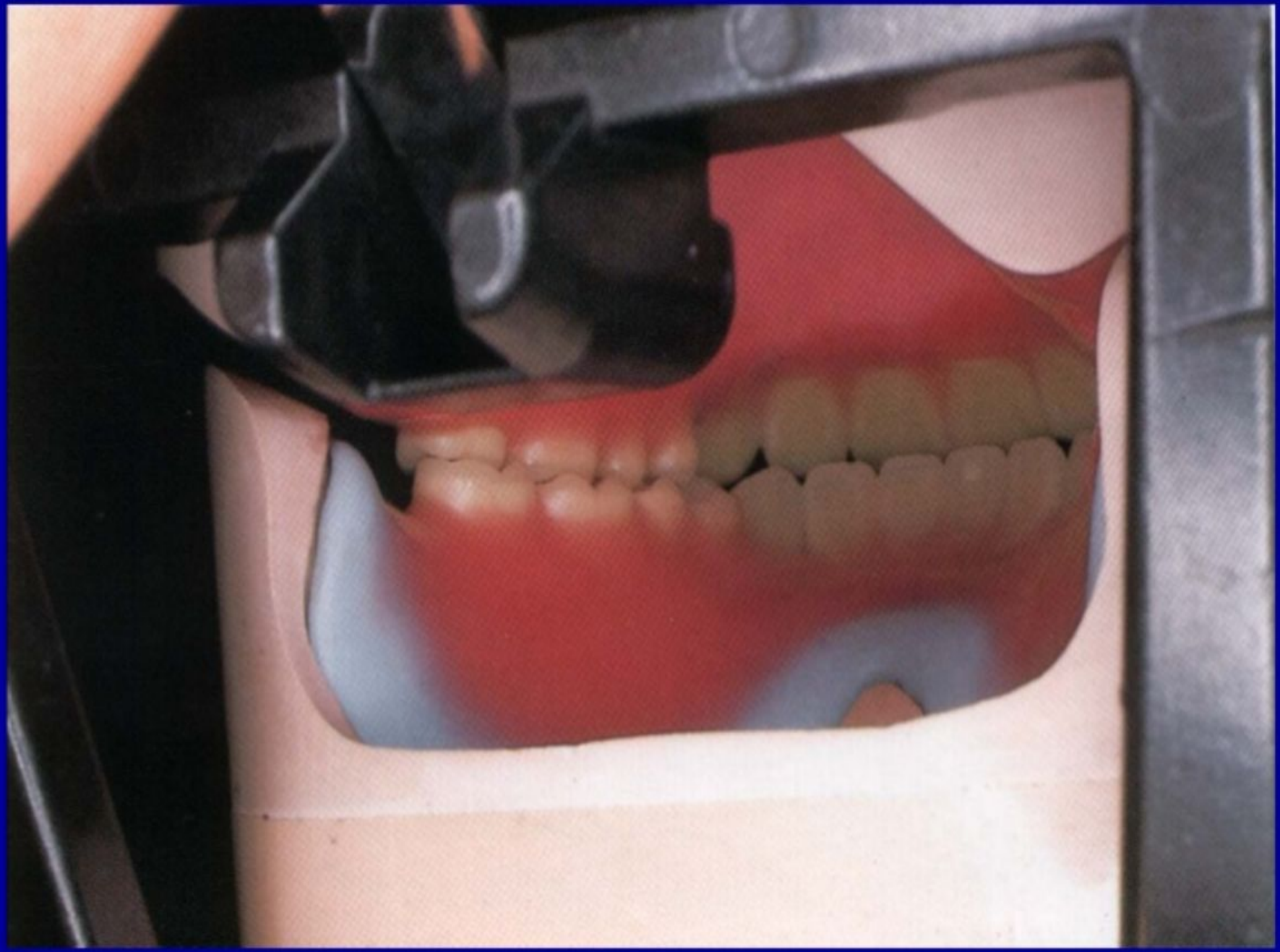
-DR. REKHA R
SENIOR LECTURER

DENTURE PROCESSING USES THE FOLLOWING TECHNIQUES:

- COMPRESSION MOULDING
- INJECTION MOULDING
- MICROWAVE PROCESSING

PREPARTION OF TRIAL DENTURE

- Wax festooning
- Sealing
- disarticulation

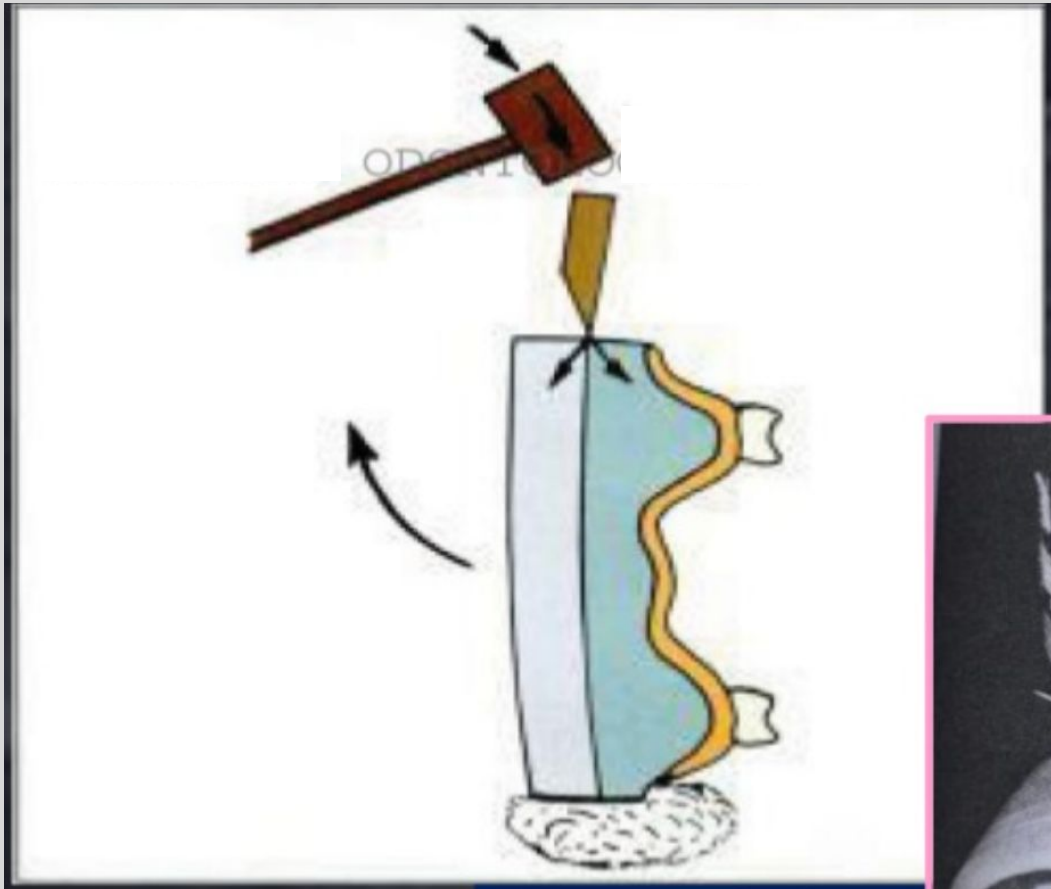


When festooning is completed . . .

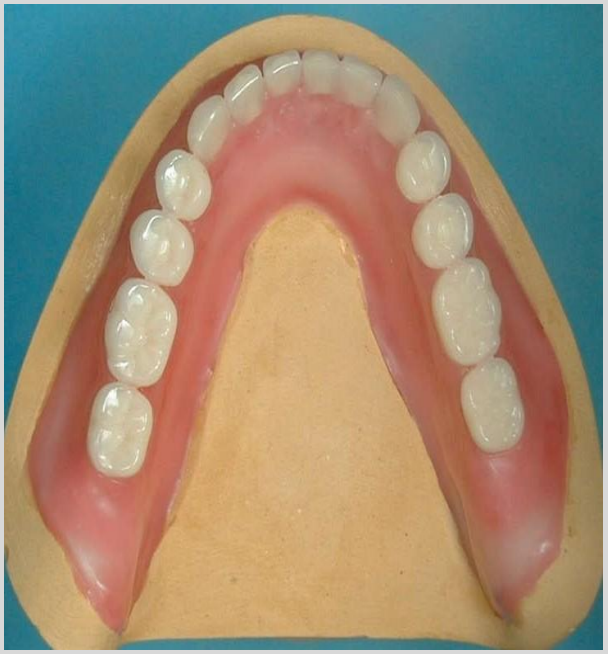
. . . Seal the periphery of the denture flange to the inner edge of the land of the cast.

DISARTICULATION

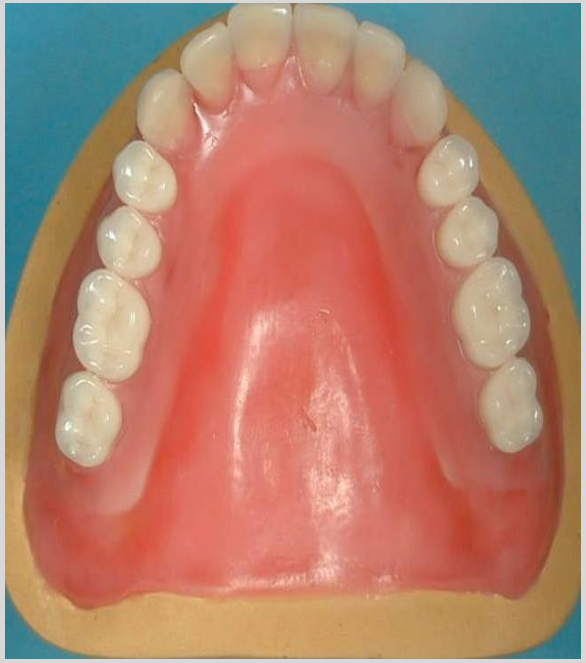
- The mounting plaster is carefully split from the cast
- The articulator is placed on a cloth to avoid damage of the trial denture
- Split the junction between the mounting plaster and the cast with help of wax knife and plaster mallet
- After separation, the cast is soaked in water

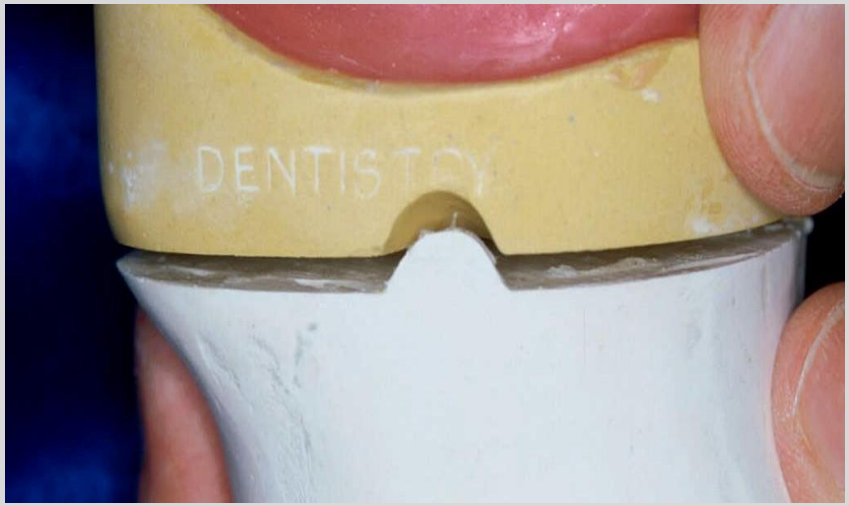


Disarticulation



Both dentures are sealed onto their respective casts





After soaking the master casts and mountings in water for a few minutes, gently remove the casts from the mountings.

Neither the master cast nor the mounting has been damaged. Following processing into heat cured acrylic resin the denture and casts can be precisely reattached to the mountings .

INJECTION MOULDING TECHNIQUE

Denture flasks: Note that the trial dentures and the master casts fit easily within the flasks.

The denture flasks are partially filled with stone and the casts are then positioned within the flask so that the land of the cast and the plaster is at about the same level as the edge of the flask. The injection funnel is positioned after the stone has set.

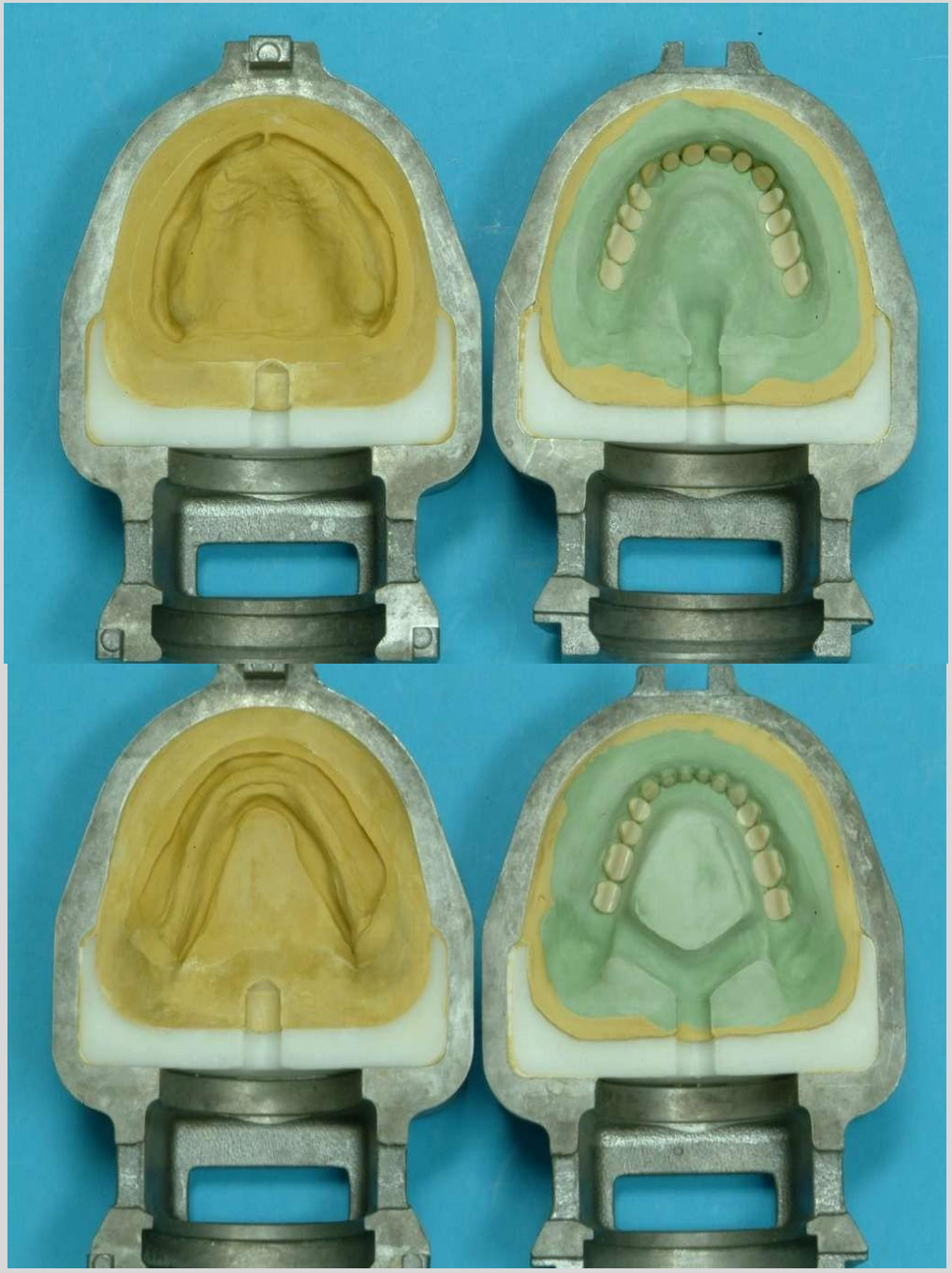
The injection channels must be 3-5 mm in diameter. For the maxilla one channel is sufficient. For the mandible two are required.

An appropriate separating medium is applied to the surface of the stone.

A thin layer of improved dental stone is applied to the surface of the trial denture.

Note that the stone application is below the level of the upper half of the flask.

The flask is filled to the brim with stone and the lid positioned as shown.



Boil Out

The wax and the record bases have been removed by hot water washes. The denture teeth are imbedded in one side of the flask and the master casts are imbedded in the other side.

After drying the stone, both sides are covered by a tin foil substitute. Avoid coating the denture teeth with the tin foil substitute.

Capsule Preparation

Contents of the capsule: 20 grams polymer, 30 ml of monomer.

Remove the monomer capsule and break it open by twisting off the sealed end. Open the capsule and pour the monomer into it.

Mixing the Resin

Mount the capsule in the Cap Vibrator, attach the securing thong, and mix for 5 minutes at room temperature.

When properly mixed a ball of resin forms within the capsule as shown.

Preparing the Resin for Injection

Remove the empty monomer container, place the capsule on the capsule plunger and press the contents upwards. There should be no air between the plunger and the contents.

Assemble and Clamp the Flask

Carefully bring the two halves of the flasks together and slide them into the clamping frame. Push the ratchet and clamp lever to the right (arrow) while applying the recommended pressure to the clamping frame.

Inserting the SR Ivocap Capsules

Remove the cover from the capsule and fully insert the capsule into the flask.

Mounting the Pressure Apparatus

Polymerization of the Acrylic Resin

Place the SR Ivocap assembly in the polymerization bath as shown. The surface of the water should be covered by plastic floaters in order to prevent unnecessary loss of heat.

The water should boil during the entire cycle. The water level must reach the red mark on the clamping frame but not exceed this level. Polymerization takes 35 minutes.

POLYMERIZATION OF THE ACRYLIC RESIN

The processed dentures are removed from the flasks taking special care to avoid injury to the master casts.

MICROWAVE PROCESSING


VIPI WAVE

COMPRESSION MOULDING TECHNIQUE

COMPRESSION MOULDING TECHNIQUE:

- Preparation of the trail denture
- Disarticulation
- Flasking procedures
- Dewaxing (boil out)
- Placing retention grooves on the artificial teeth (diatorics)
- Application of the separating media
- Mixing of powder & liquid (heat cure)
- Packing
- Curing
- Cooling
- Deflasking
- Finishing
- Polishing

FLASKING

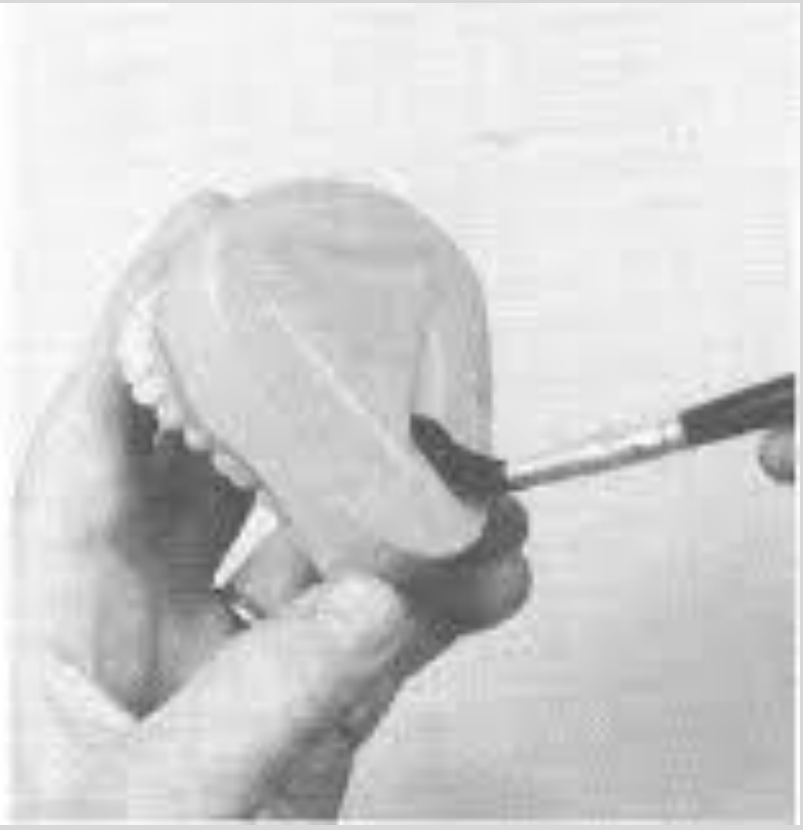
- The festooned wax denture must be converted to resin to make a final denture
- Is the process of investing the cast with the waxed denture in a flask to make a sectional mold that is used to form the acrylic resin denture base
- Dental flask: is a metal case used in investing the denture
- It consists of:
  - Base (lower half)
  - Body or counter
  - Lid
- Body with lid called (upper half)

Parts of a flask

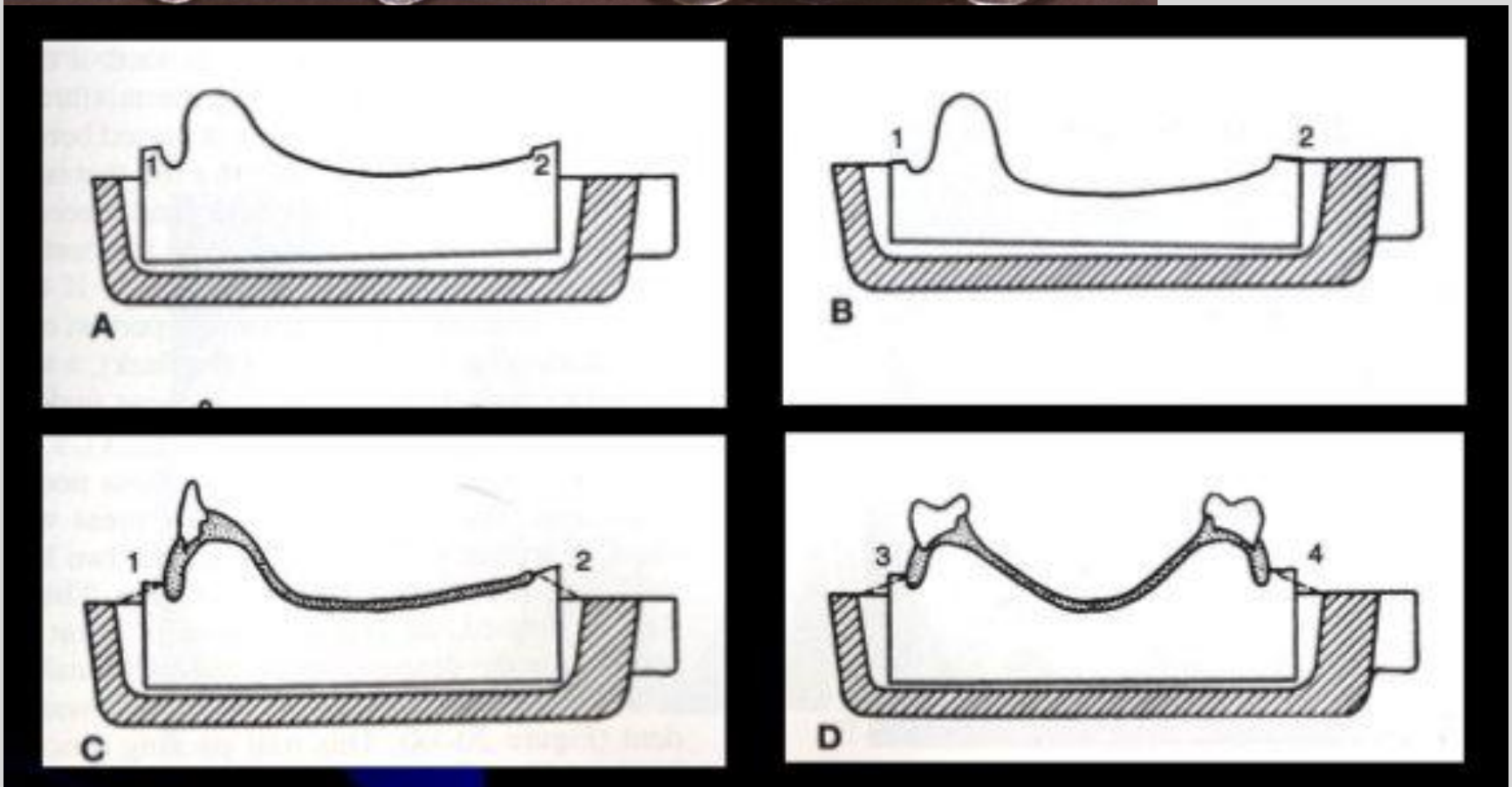
1. The *cap* (thin top)
2. The *cope* (middle)
3. The *drag* (bottom)

FLASKING PROCEDURES:

- The inner surface of the flask is coated with Vaseline, while the base of the cast is painted with separating medium
- This prevents the investment material (plaster of paris) from attaching to the cast

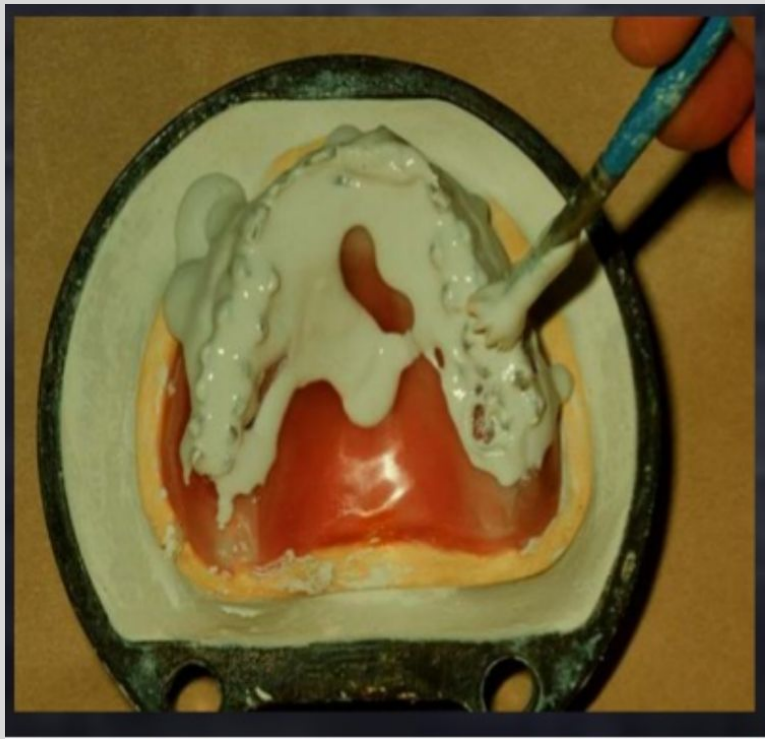


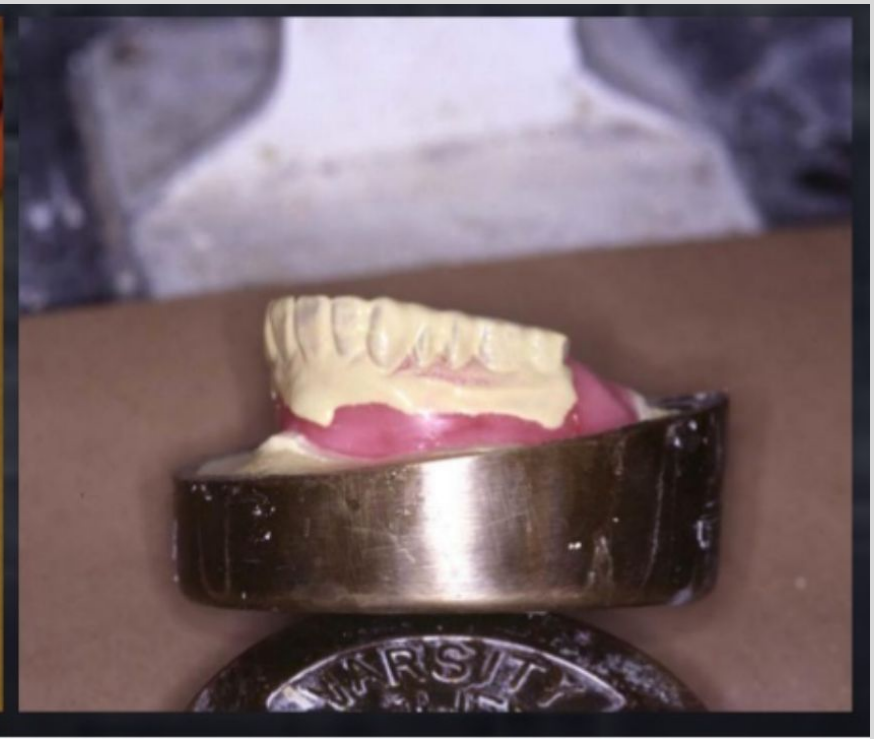
SMOOTHEN THE INVESTING MATERIAL

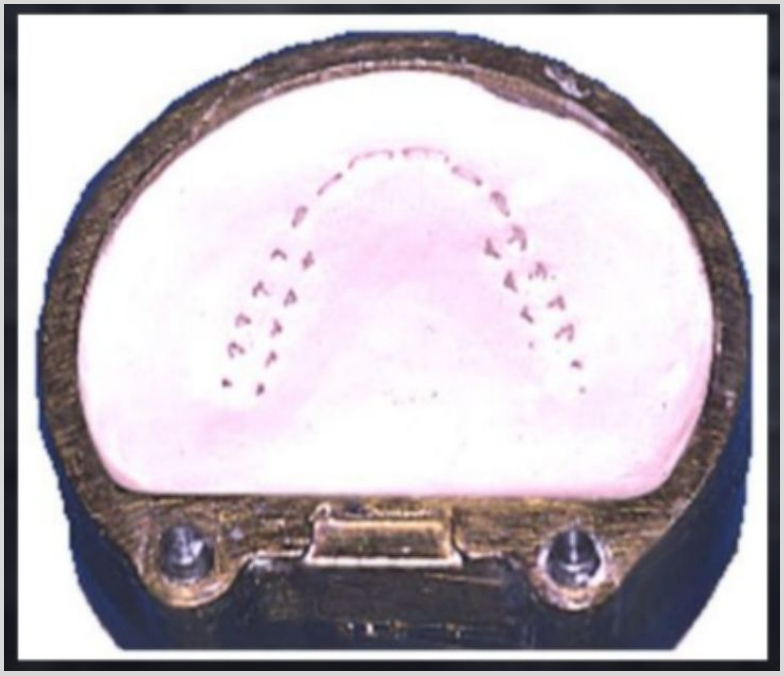


After the set of the gypsum investment layer , separating media is painted on it, to prevent the sticking of the second layer of the gypsum investment to the first layer

A mix of plaster is placed over the surface of the teeth in the invested trial denture

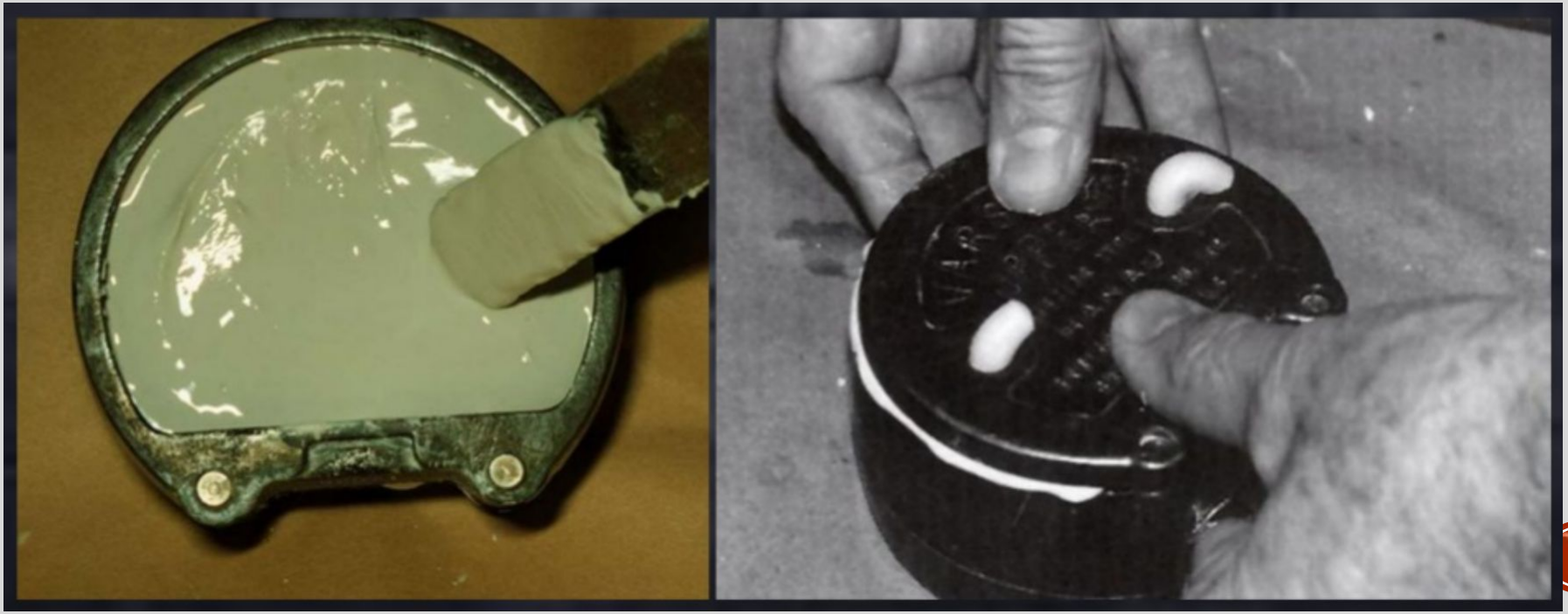




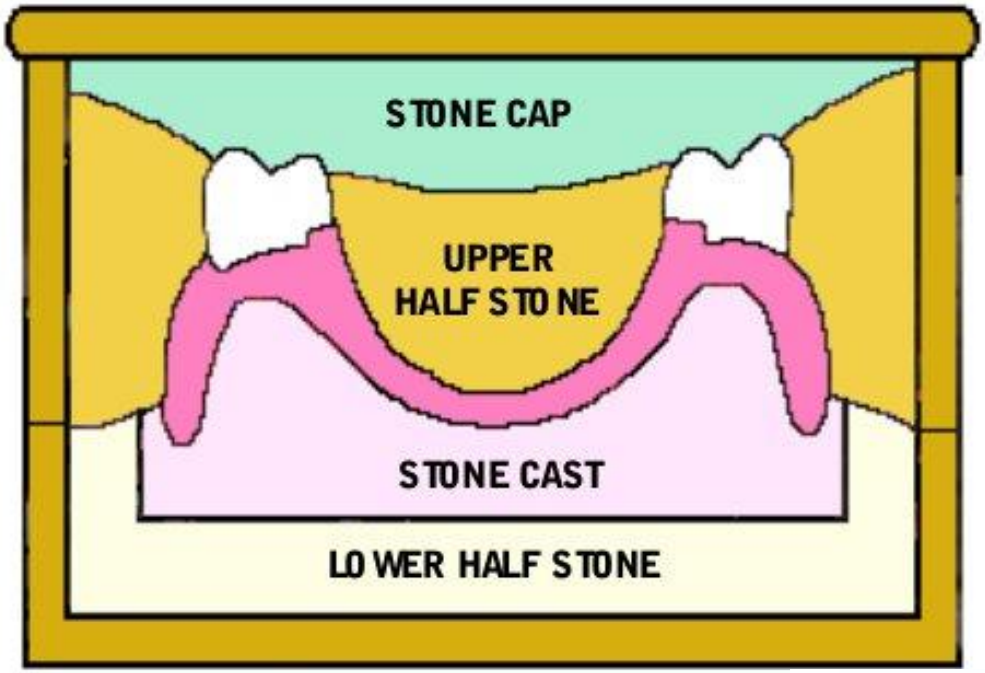


SECOND POUR

THIRD POUR



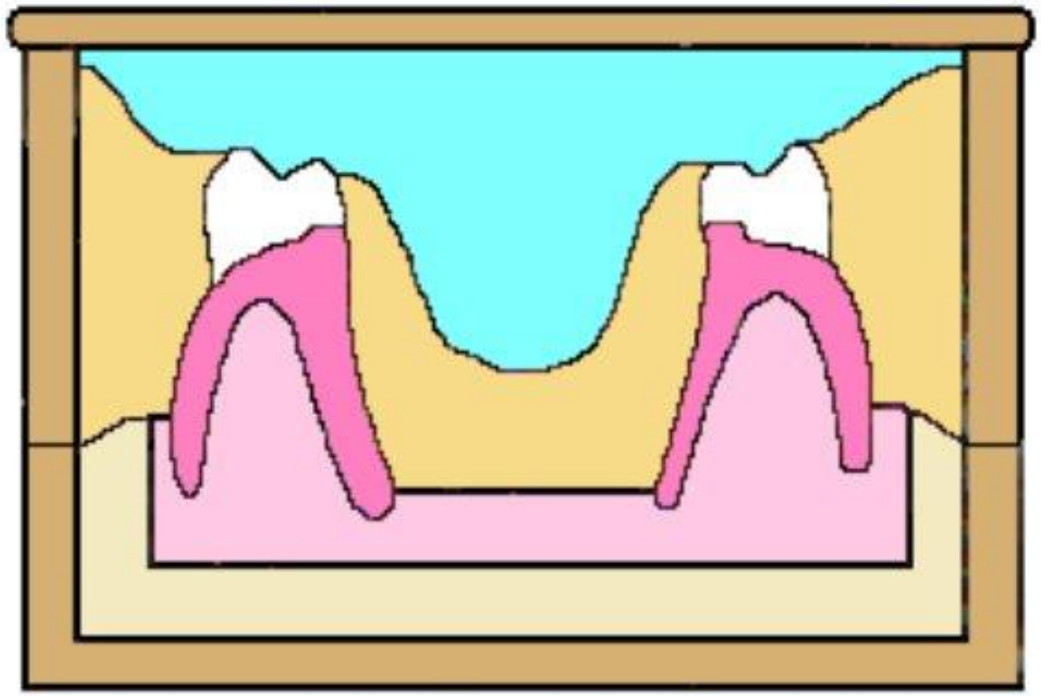
The clamp is tightened to hold the flask in place. 30-60 mins is allowed to reach its final setting time

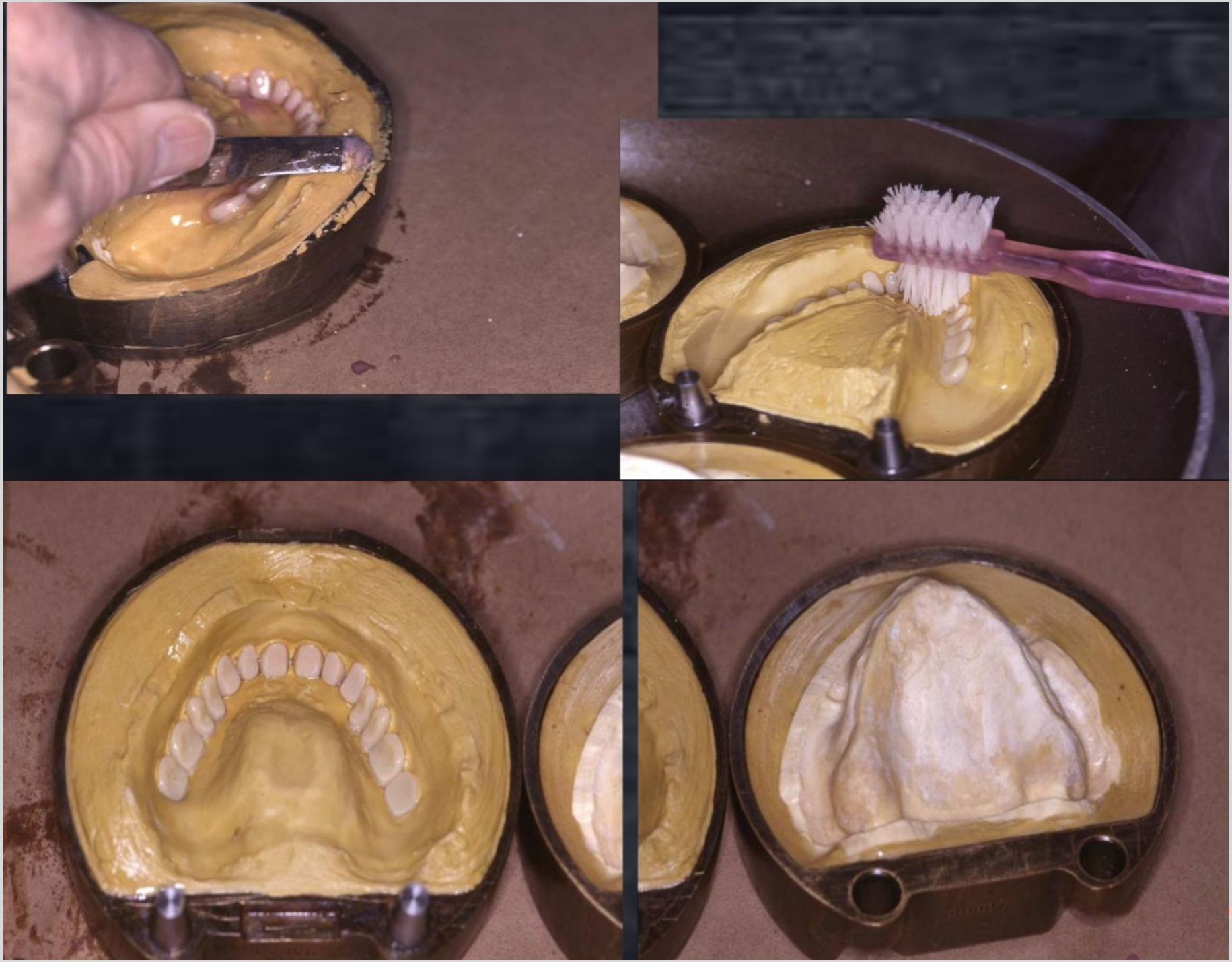


COMPLETE D FLASKING

Maxillary denture

Mandibular denture





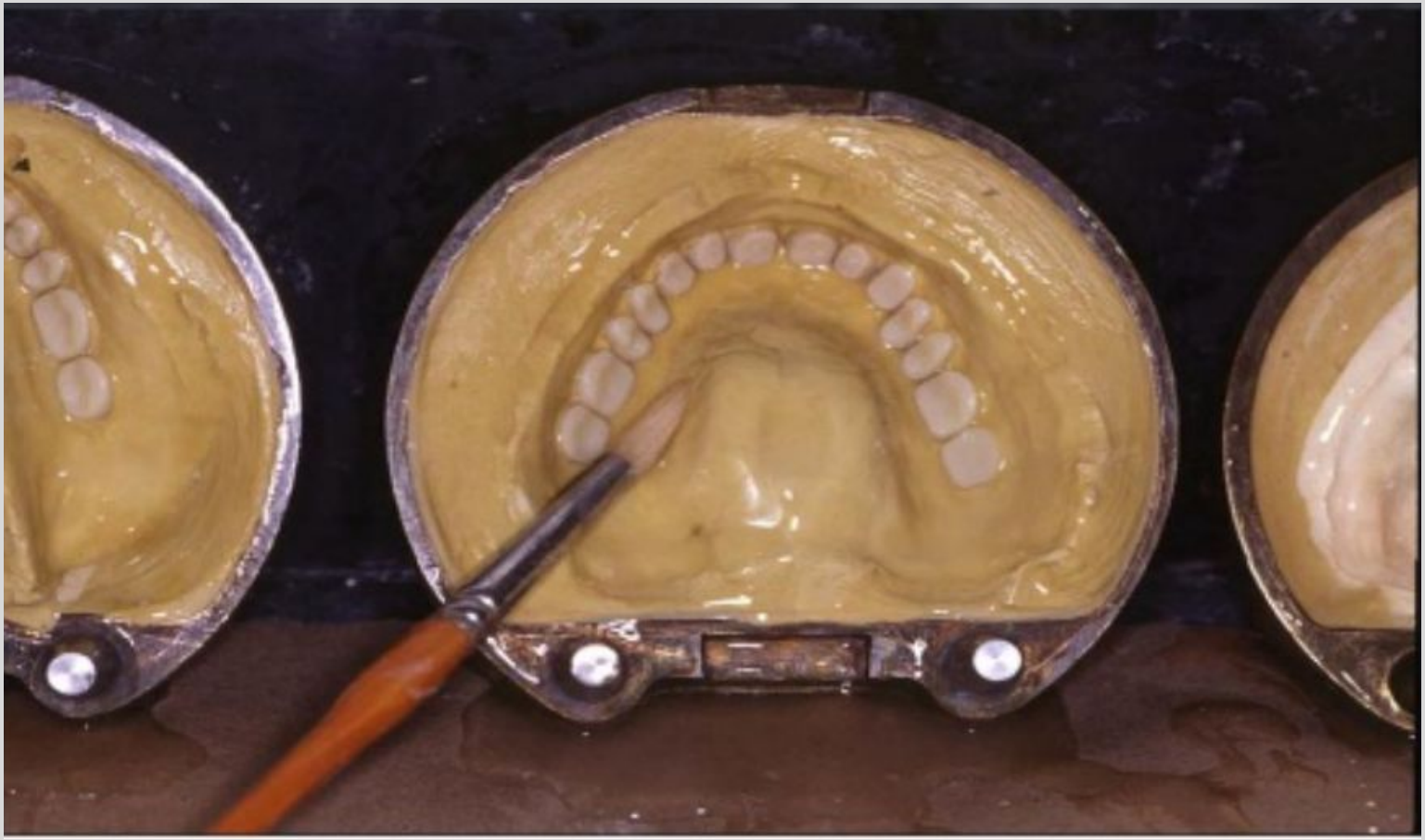
DIATORICS

-ROUND BUR IS USED TO PLACE SMALL RETENTIVE HOLES ON THE TEETH

Helps increase the strength of attachment between the denture base and the teeth

APPLICATION OF THE SEPARATING MEDIUM

- Its applied to the dewaxed mould space prior to packing the acrylic resin
- Avoid painting it on the teeth surface



Roles of separation medium

- To prevent the passage of water from gypsum to resin
- To minmize the passage of monomer to the plaster
- To facilitate separation of the flasks

- various types of separating media used are : -

- cellulose lacquers.
- soft soaps.
- sodium silicate.
- starches.
- evaporated milk.
- Tinfoil.
- sodium alginate.

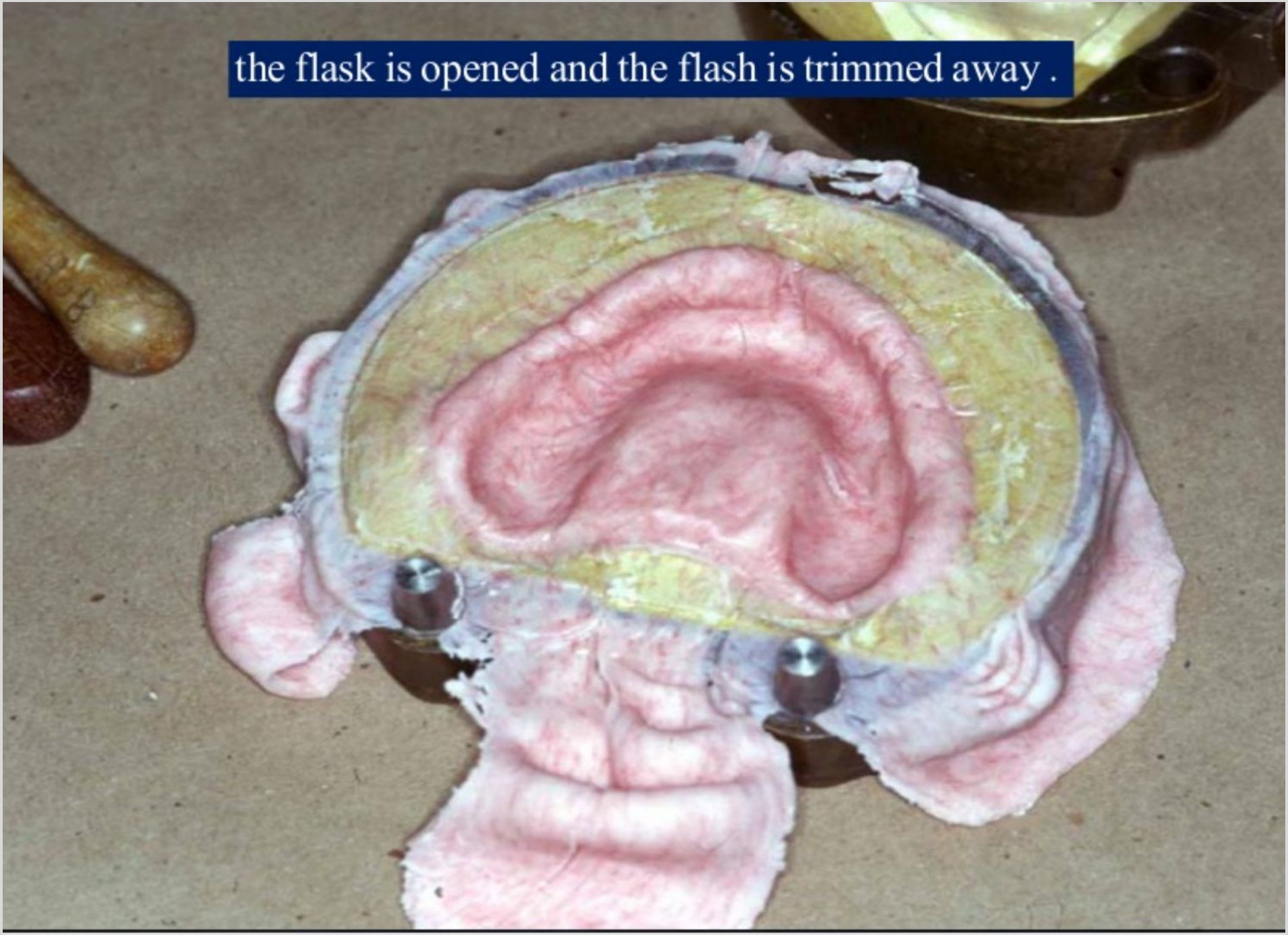
Mixing of powder and liquid

- Heat cure acrylic is used , polymer /monomer is mixed according to manufacture instruction , usually 10cc of monomer , and 30cc of polymer will be enough to pack an average- sized denture. (**1:3**) M / P.
- when the material reaches the dough stage, it is ready for packing.

- Divide the acrylic in half and plastic in tooth portion of flask

Use cellophane or polyethylene film as a separator for re-opening the flask- add acrylic, remove flash or insert names

Place flasks together and press to remove excess acrylic.


the flask is opened and the flash is trimmed away .

Curing (polymerization) :

- after final closure the flasks are kept at room temperature for 30 to 60 min . this is known as bench curing.
- Purpose of Bench curing:

  Permit an equalization of pressures throughout the mould space.

CURING CYCLE

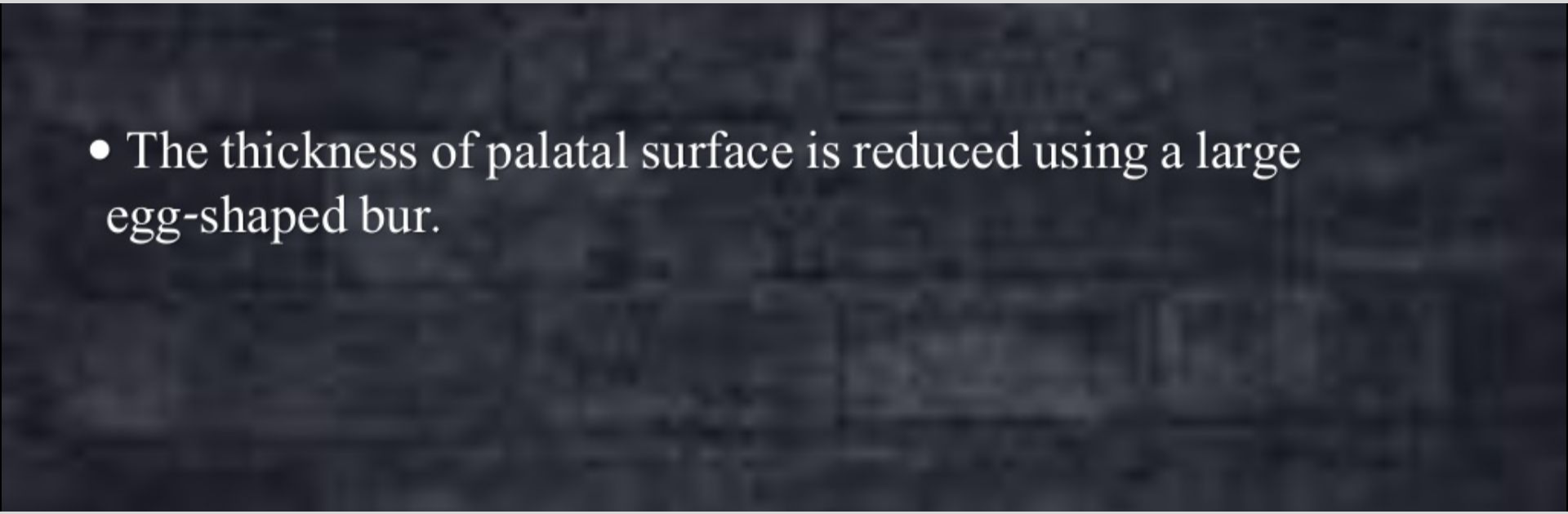
- It is polymerization cycle. The curing cycle selection depends on the thickness of the resin.
- Long curing – heat the flask in water at 60-70^{0}C for 9 hours
- Short curing – heat the flask at 74^{0}C for 90 mins, then at 100^{0}C for 60mins.

COOLING

- The flask should be cooled slowly (bench cooled)
- Cooling for over 30mins
- Then placing under tap water for 15mins

FINISHING AND POLISHING

- Trimming
- Sand paper
- Pumice



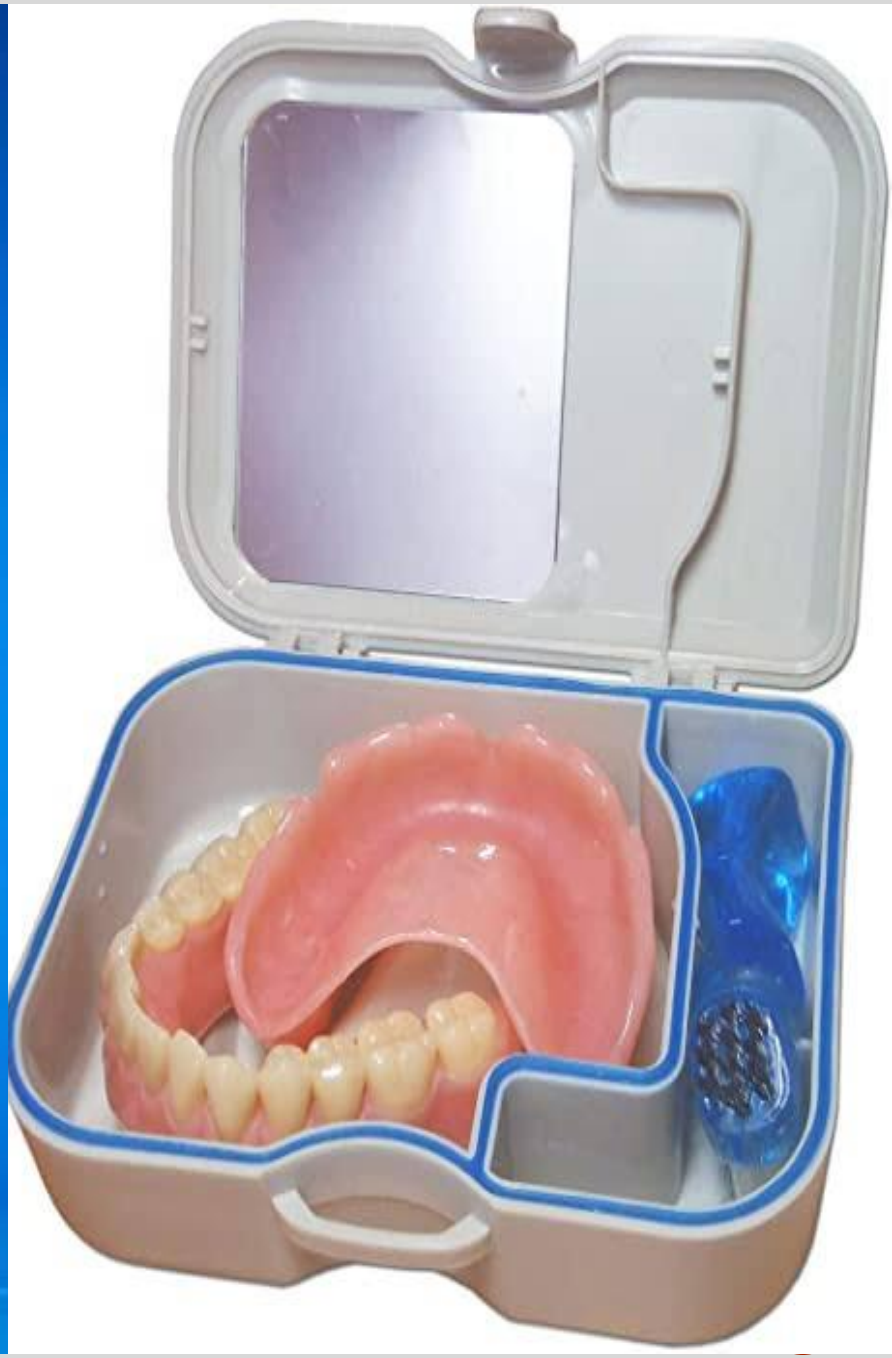


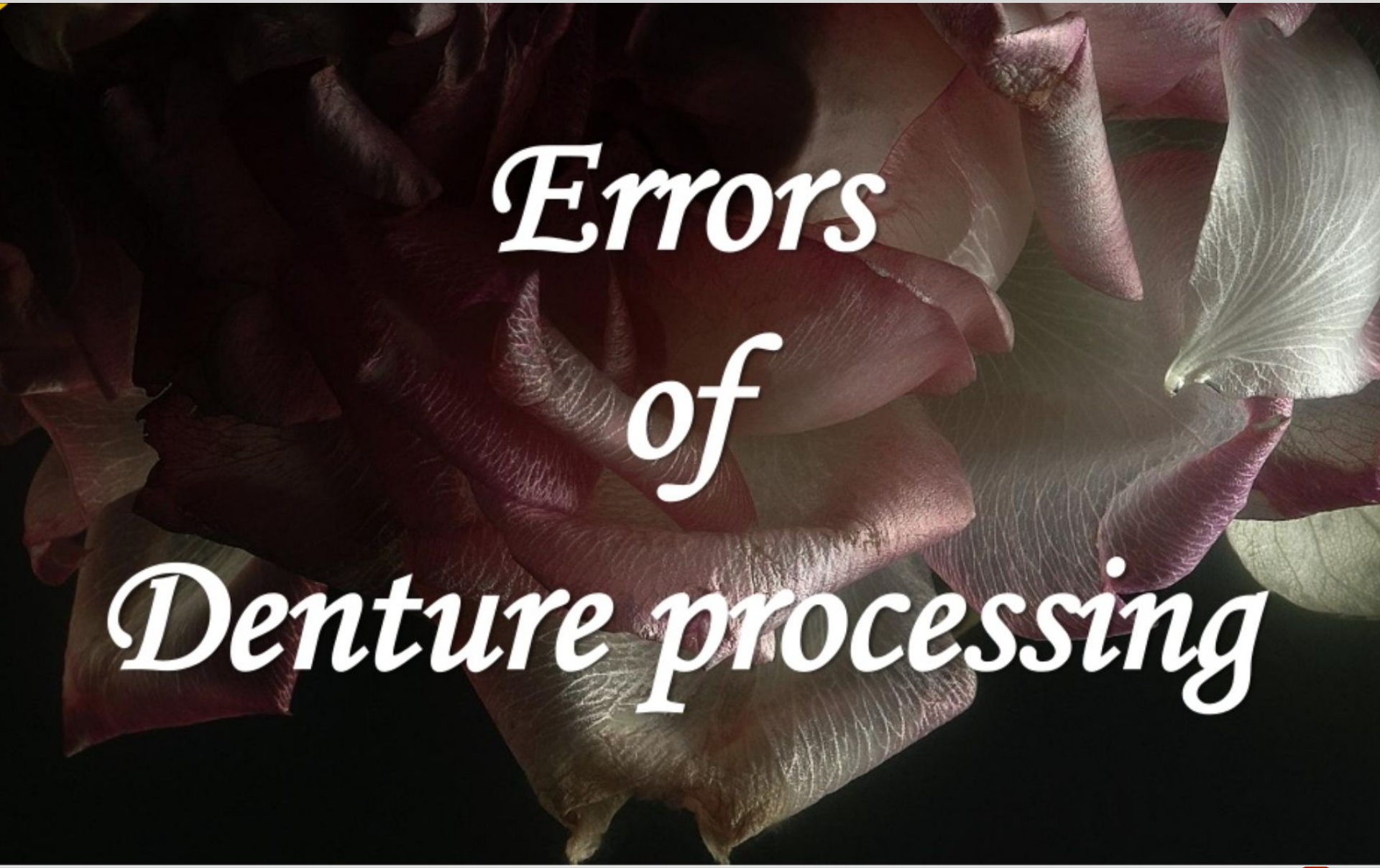

Sand paper finishing :

- sand paper should be fixed on to a lathe mounted sand paper mandrel.
- Even the finest of all scratches should be removed during this procedure.
- Some technicians prefer the use of a wet sand paper to improve the finish.

Polishing (Pumice wash)

- a hand piece mounted rubber cup or a medium bristle brush can be used to polish the inaccessible areas.
- After polishing, the denture should be thoroughly washed in soap water.
- A tooth brush can be used to remove the remaining plaster and pumice.
- After finishing , the denture are stored in water and stored till the day of the insertion appointment.




Errors
of
Denture processing

- Adding the resin material in layers during trail packing may lead to color streaks.
- Packing the resin in sticky stage may lead to porosity.
- Lack of pressure, lead to presence of fine pits.

Errors of cooling:

- Rapid cooling after curing, lead to cracked, warpage or fractured of the denture base or the teeth.

Errors of finishing and polishing :

- Reduction should never be carried out on the tissue surface.
- Care should be taken to avoid excessive pressure on the denture to prevent warpage.

CONCL USION