Lec.17 **Class: 2**

Flasking (denture processing)

The flask: It is a metal case or tube used in investing procedures.

Or can defined as a sectional metal case used to form sectional mold (made of stone or plaster) for the purpose of denture processing.

The flask is consists of:

1. Lower half that contains the cast.
2. Upper half.
3. The cover or lid.

Flasking of denture: It is a process of investing the cast with waxed denture in flask to make a two sectional mold used to form the acrylic resin denture base.

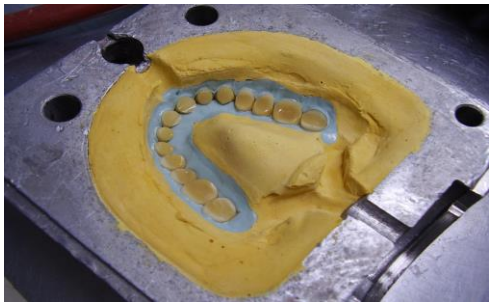
Flasking techniques:

1. Compression technique:

Open-pack method or conventional method.

2. Injection molding technique:

It is a complicated procedure required special flask and equipment.



3. Microwave technique:

This technique takes three minutes curing in microwave.

The procedure of processing the denture in compression technique:

Denture sealing:

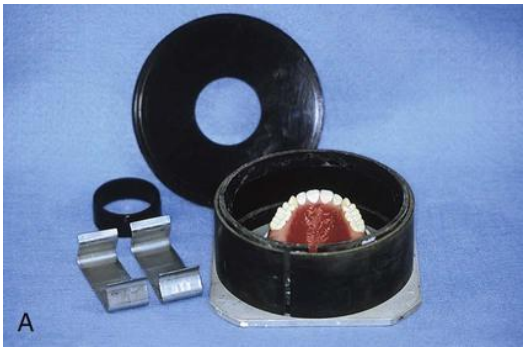
The upper and lower trial dentures sealed all over the border to the margin of the casts while the casts on articulator.

Separation of cast from articulator:

Soak the cast and the mounting plaster in water a few minute to separate the cast from the mounting plaster, save the plaster of mounting, as it will be used to reposition the cast on the articulator after the dentures are processed.

Check the cast and denture height:

Make sure that there is enough space between the incisal and occlusal surface of the teeth and the top of the upper ring of the flask about 3-6 mm, if there is no space then the cast must be reduced in thickness.



Tinfoil adaptation:

Adapt a layer of tinfoil to the base of the casts, slightly overlapping the edges to insure clean removal of the cast from the plaster or stone investment, apply separating medium to the cast and flask.

Investing the lower half of the flask:

Use a mixture of plaster or stone and placed in the base of the flask.

Center the cast with the waxed denture in the lower half of the flask and pushed to place until the bottom of the cast touches the base of the flask. Note that the posterior portion of the cast is level with the edge of the flask.

- Teeth and wax not covered by the plaster.

Remove any undercuts in the plaster (undercuts will prevent the separation of the upper ring from the lower portions of the flask). The plaster smoothed even with the base of the cast and allows the plaster to set.

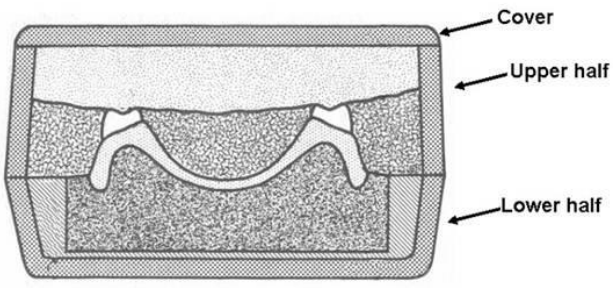
After the final setting of plaster has occurred, it will be coated with separating medium.

Investing the upper half of the flask:

Put the upper portion of the flask over the lower portion.

Mixing of stone or plaster then pouring the plaster on the flask to flow and reach all surfaces of teeth without any air babbles by putting the flask on the vibrator, the plaster or stone must reach the incisal edge and occlusal surface of teeth. Separating medium painted on the

second layer of plaster after setting and smoothing of plaster.



A third mixing of stone done and pouring it until the flask is filled with stone then the flask cover the upper portion and provide excess plaster or stone to enter through the holes in the cover and around the edges, it is essential to have metal to metal contact. The stone left to set completely for about 45 minutes.

Wax elimination:

Place the flask on a ladle and lower it into boiling water for 5 minutes. This will soften the waxed denture base, which can easily remove from the mold when the flask opened. After five minutes, remove the flask from the boiling water and gently open it, insert a wax knife between the lower and upper half and gently separate them.

All the teeth should remain in the top half of the flask. Remove the semisolid pieces of the waxed denture base. Flush out all the remaining wax by using more boiling water.

Wax solvent can be used with stiff brush to remove any remaining wax on teeth. As soon as possible flush the mold with clean hot water to which a detergent has been added. The detergent will be flush out the wax residue from area that cannot reach with the wax solvent. Immediately flush the mold with hot water to remove all traces of the detergent solution.

It is essential to remove all wax residues. Acrylic resin will not adhere to a teeth surface coated with wax. Stand the flask on its side and allow it to drain, dried and cooled.

- The cold cure record base removed from the cast.

Packing:

Separating medium used on plaster or stone, care should be taken not to painting the teeth with separating medium. The flask is left to dry and another coat is painted on the flask and left to dry.

Heat cure acrylic is used, polymer and monomer mixed according to manufacture instruction. Usually 10 CC of monomer and 30 CC of polymer will be enough to pack an average size denture, after mixing of the material and reach dough stage, it's ready for packing.

Pack the hot cure acrylic in the upper half of the flask, being sure to press it well around the teeth.

On the first closure of the flask halfs using nylon sheet. At least two trial closures done and before the final closure the nylon sheet between them is removed and a thin layer of separating medium applied on the cast (on the lowr half) and then the two halves of the flask are closed.

Apply pressure by bench hydraulic press of about 100 kg/cm^2 over the flask to remove excess acrylic.

Then the flask is put in spring clamp and the clamp is closed tightly, it is essential to have metal to metal contact.

Curing:

It is the process of polymerization of acrylic resin by heat.

Types of curing cycle:

a. Slow curing cycle:

The flask is heated to 70°C for 7 hours then 100°C for 3 hours (The total 10 hours).

Or heated to 75°C for 6 hours then 100°C for 1 hour (The total 7 hours).

Or 74°C for 8 hours.

b. Rapid curing cycle:

The flask is heated to 140°C for 10 minutes with 40 P.S.I. pressure.

- The best curing cycle is the slow curing cycle because most of the conversion of monomer to polymer occurs during the period at 70°C and the rapid cycle method may induce greater dimensional changes in the dentures.

Deflasking:

It is the removal of the plaster mold from the flask and separates the mold from the cast and denture. The flask removed from the mold using a flask ejector, which used to separate the flask from the mold after removing of the cover.

By using a saw, longitudinal and horizontal cuts carefully made through the plaster or stone mold and the pieces gently removed.

The cured dentures and their casts have been removed from the mold.