

# Prosthetic V.

Removable dentures I.

# Removable dentures

- Partial
- Complete (full)

# Prosthetic dentistry – replacement of

## Damaged teeth

– *reconstruction of the crown  
(inlays, crowns)*

## Missing teeth

- *appropriate prosthesis (denture)*

# Prosthesis

- Individually made
- Differences
  - in the type of defect, extent and location
  - in the size, shape and position of teeth
  - in the quality of hard and soft tissues of the oral cavity
  - in intermaxillary relations



# Planning of the denture

## Complex examination

1. Extent and location of the defect
2. Damage of the involved teeth (caries, fillings atc.)
3. Periodontium (supportive tissues)
4. Shape, size, position of teeth, relationship to the neighbours
5. Occlusion, articulation – relationship to the antagonists
6. Quality of the alveolar process
7. The level of oral hygiene
8. X-ray examination
9. Study impressions – study models
10. Detail evaluation of the abutment teeth (pilots) – most important teeth – canines, premolars

# Classification of defects

## Voldřich

I. Class – dental arch with gaps

One or more teeth are missing

Small gaps – 1 – 2 teeth

Big gaps 3 – 4 teeth at most. This big gaps must be demarcated by pilot of the best quality. (canine, 1st or second molars – pilots of 1st class or their equivalents)

# Classification of defects Voldřich

## II. Class

Reduced (shortened) dental arch, then last tooth is the second premolar.

With gaps

Without gaps

Bilateral

Unilateral

# Classification of defects Voldřich

## III. Class

Individual teeth or small groups of teeth

# Classification of defects Voldřich

## IV. Class

### Edentulous dental arch

# Classification of pilots (abutment teeth)

Pilots I. class

Canines

Molars (1st, 2nd)

# Classification of pilots (abutment teeth)

Pilots II. st class

Incisors - maxillary incisors, premolars

# Classification of pilots (abutment teeth)

Pilots II. st class

Incisors - maxillary incisors, premolars



# Classification of pilots (abutment teeth)

Pilots III. class

Mandibular incisors, third molars, all teeth with bad biological factor



# Biological factor

- Caries
- Pulp vitality
- Level of the endodontic treatment
- Level of the resorption of the alveolar bone
- Periodontium
- Relationship to antagonists
- Relationship to neighbour teeth

# Way of the transfer of masticatory forces

- Tooth
- Tooth and oral mucosa
- Oral mucosa

# Classification of dentures

## I. Class – fixes or removable bridges

# Classification of dentures

## III. Class –removable denture

- Tissue born denture (sometimes also tooth and tissue born denture)

# Classification of dentures

## II. Class removable dentures

With metal framework and tooth and tissue borne dentures

*The way of transfer of masticatory forces -  
tooth and oral mucosa*

# Classification of dentures

## IV. Class – complete denture



# Removable dentures

- Removable partial dentures
- Complete denture

# Classification

- Class I. Dental arch with gaps (interruptions) interruptions
- Tooth supported (borne) dentures
  
- Class II. Reduced (shortened) shortened ) dental arch
- Tooth and tissue supported borne dentures

# Way of the transfer of masticatory forces

- Tooth □ □
- Tooth and oral mucosa □ □
- Oral mucosa
  
- Tooth and and/or oral mucosa



Bone

# Components

## Base

- Replaces missing part of alveol
- Supports the supplied teeth and effects the transfer of occlusal stresses to the supporting oral structures
- structures.

Different materials –attached to the metal framework metal framework or resin only

# Base must have

- Accuracy of adaptation to the tissues with low volume change
- Dense non irritating surface that is capable of receiving and maintaining a good finish
- Thermal conductivity
- Low specific gravity
- Sufficient strength – resistance to fracture
- Easily kept clean
- Aesthetics acceptability
- Potential for future relining
- Low initial cost

# Components

- Elements of anchorage

- Clasps

casted clasps, wire clasps, combined clasps

- Anchorage supporting bar

- Attachements

- Telescope crowns

# Components

- Teeth
- acrylic
- porcelain

# Cast clasp

- Surface retainers

they lie on the surface of teeth

- Arms

two or three arms



# Clasps

- One arm made of wire
- Simple
- retainer retainer, only in simply temporary
- prosthesis prosthesis.
- It can damage the tooth because no
- stabilization (bracing)

# Clasps

- Two arms clasps One arm for retention (wire) wire
- One arm for stabilization against horizontal forces

# Clasps

- Three arms clasps One arm for retention (wire)
- One arm for stabilization (bracing) against horizontal forces
- One arm for transmission of occlusal forces

# Clasps

- Three arms clasps One part for retention (convexity)
- (convexity) upon the maximal convexity going under the maximal convexity One part for stabilization against horizontal forces
- On arm for transmission of occlusal forces the rest)

# Rests

- Any unit of a partial denture that rests upon the tooth surface to provide vertical support to the denture is called a rest
- Upon the occlusal surface (premolar and molar)
- Upon the lingual surface (prepared) of anterior teeth

# Rests

- Transmitted forces parallel to the long axis of the tooth will prevent movement in a cervical direction

# Connectors

- Connectors connect the parts of denture
- Major
- Minor

# Major connector

- Connect the parts of the prosthesis
- - All other parts are directly or indirectly attached to it
- - Must be rigid – stresses may be effectively distributed over the entire area



# Mandibular major connector

- Lingual bar
- Lingual plate ( continuous bar retainer and lingual bar)

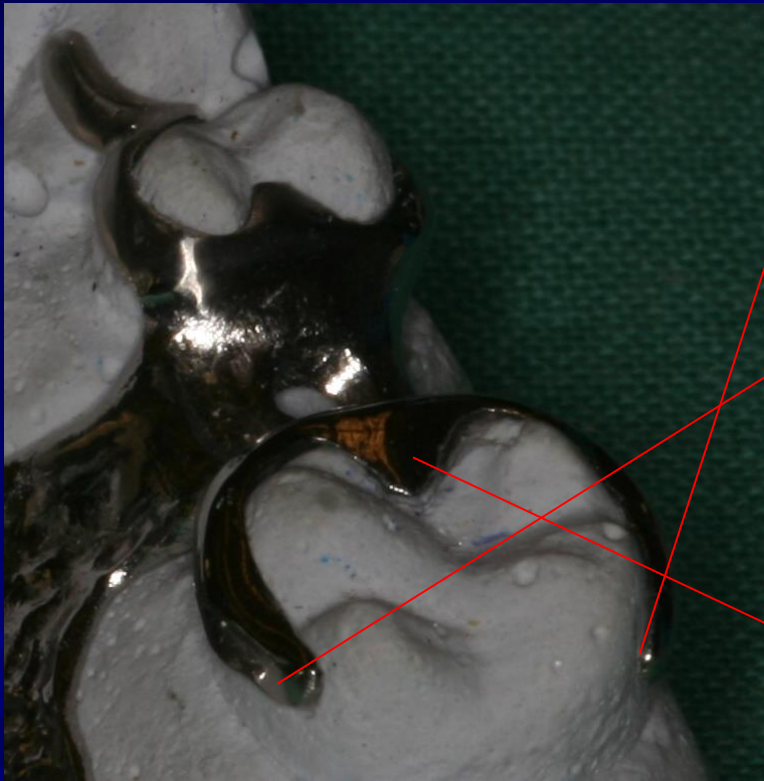
# Maxillary major connector

- Anterior and posterior palatal bar
- U- shaped palatal connector
- Palatal plate type connector

# Minor connectors

- Arising from the major connector – join the major connector with other parts of the denture
- Placed not on a convex surface of the abutment teeth but in embrasure

# Clasp – three armed cast

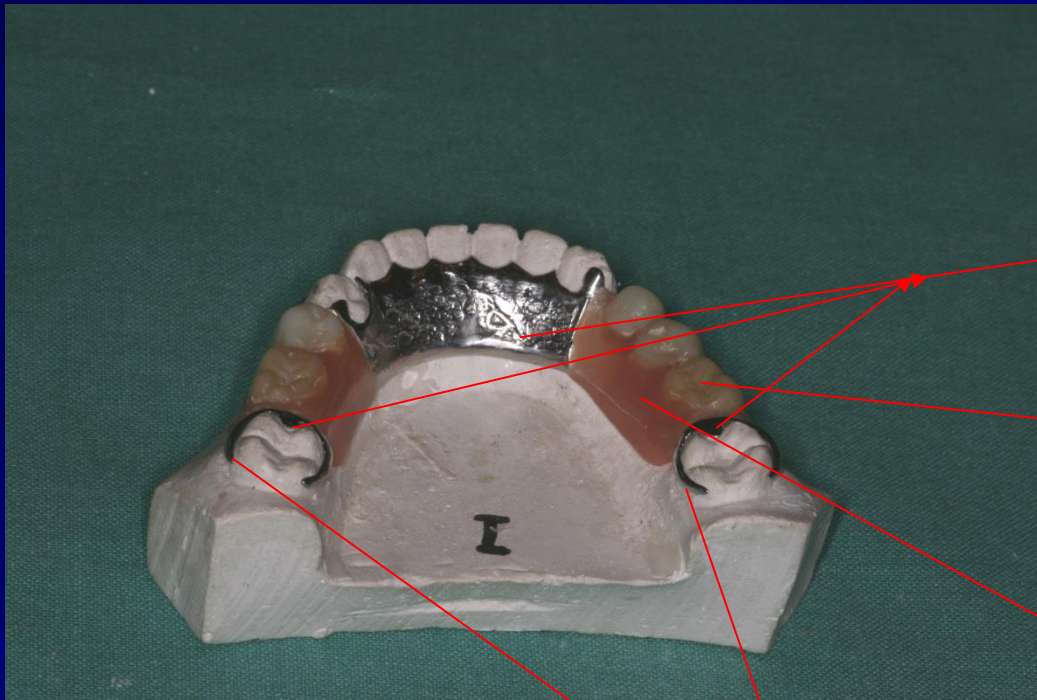


One part for retention (going under the maximal convexity)

One part for stabilization against horizontal forces (upon the maximal convexity)

On arm for transmission of occlusal forces (the rest)

# Class I and II dentures with the metal framework



**Class I. denture  
Components:**

Metal framework

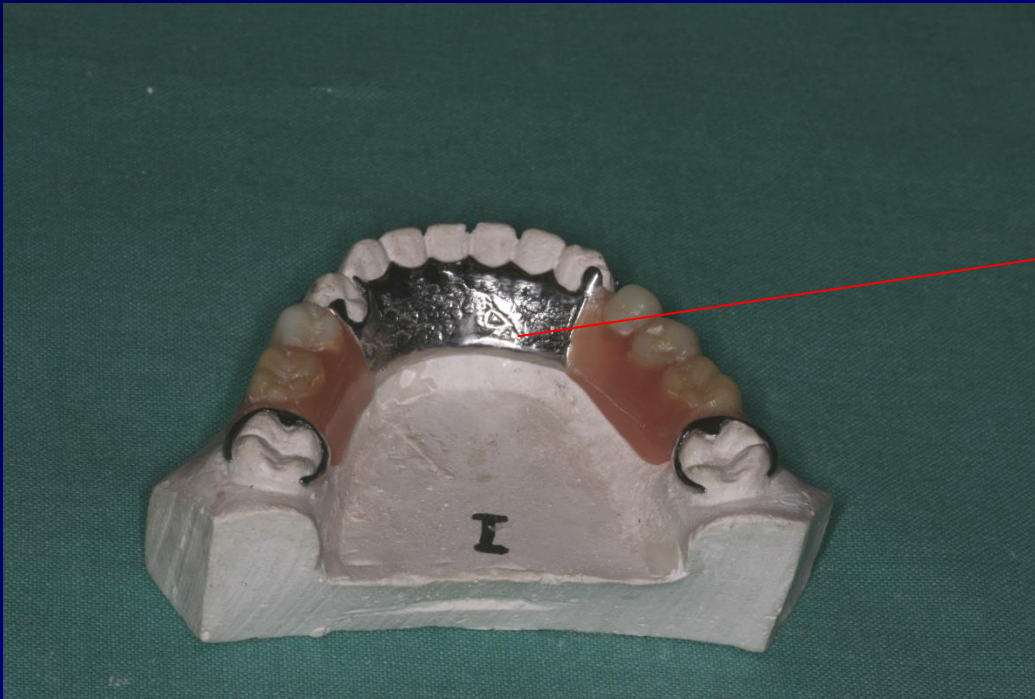
Artificial teeth

Base

Clasps

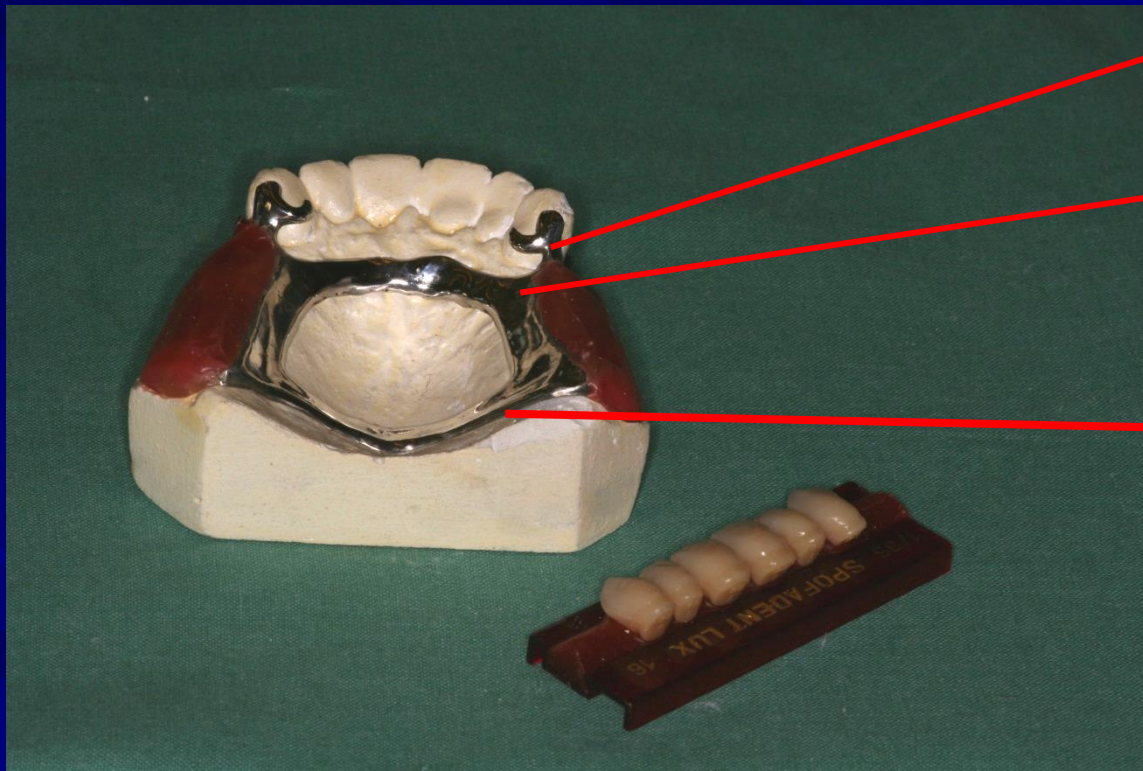


# Class I and II dentures with the metal framework



Lingual plate

# Class I and II dentures with the metal framework



Minor connector

Anterior palatal bar

Posterior palatal bar

# Sequences of operations

Taking impressions (alginate.



Both jaws always !

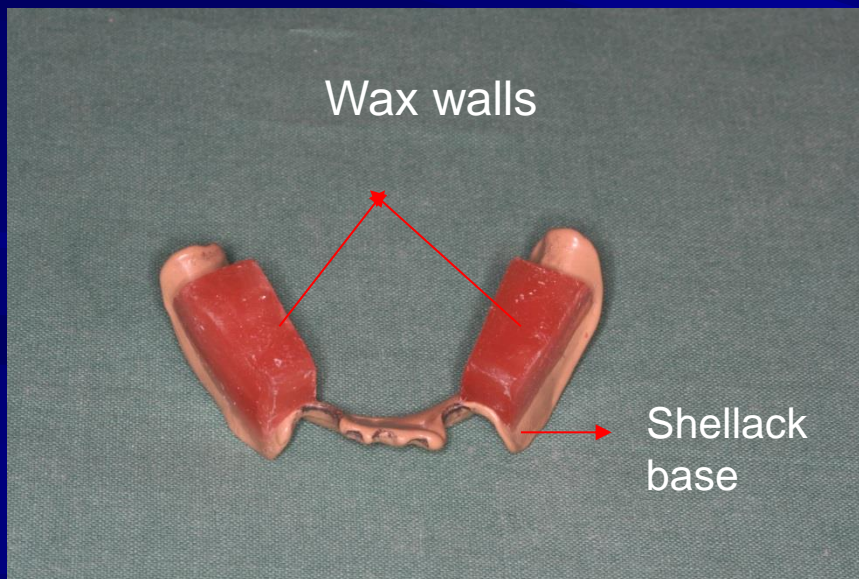


# Sequences of operations

Pouring – gypsum models.

Fabrication of the individual impression tray if necessary.

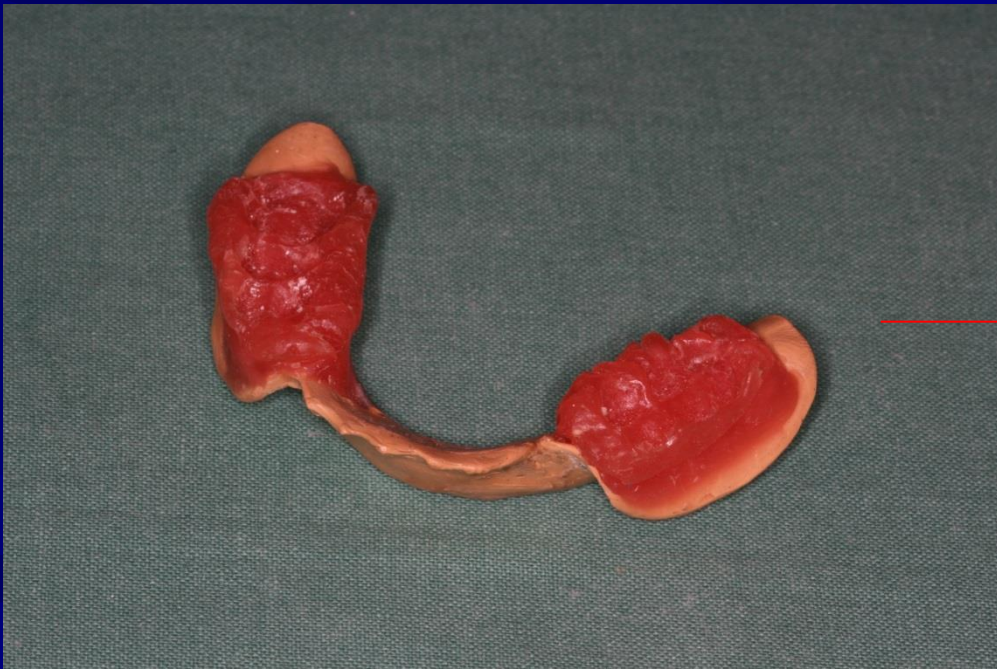
If not, fabrication of the bite template:



The bite template is necessary for The registration of the intermaxillary Relationship. It consist of the shellack base and the wax walls.

# Sequences of operation

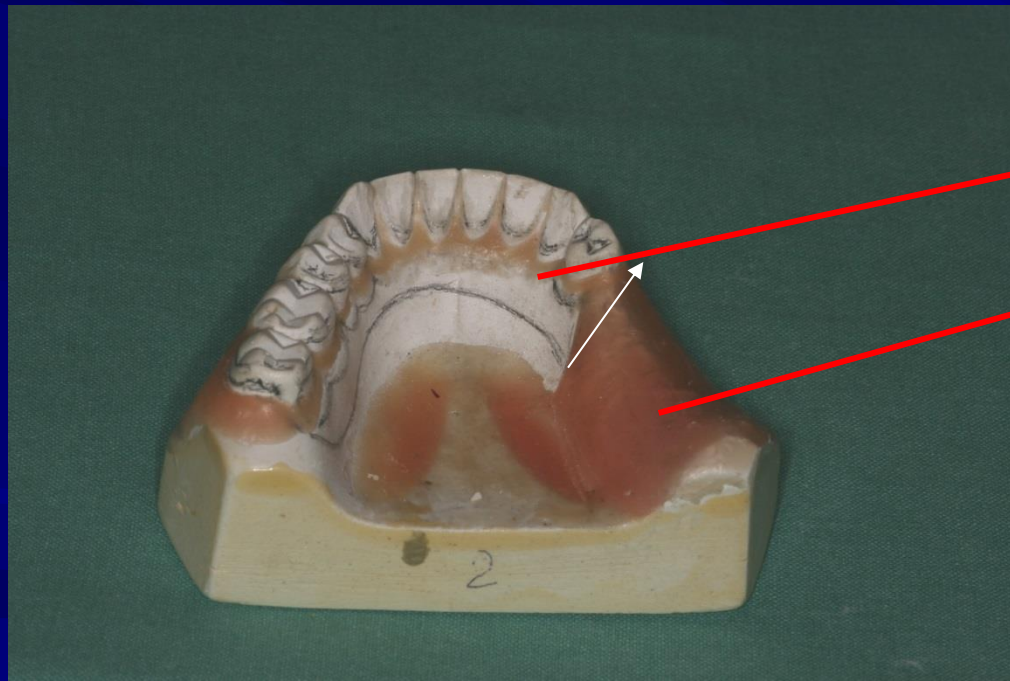
- Registration of the intermaxillary relationship.



The registrate

# Sequences of operation

- Preparation of the model for backup.



All undercuts are blocked out

Also the space  
under the future framework

Using heated wax



# Sequences of operations

- Backup using the reversible impression agar based material in a special flask
- Pouring of this impression with -the investing material – casting model



# Sequences of operations

- Fabrication of the wax pattern of the metal framework.



Influx system

# Sequences of operations

- Investment with the same investing material –a special flask.



The wax is burnt out and the form is heated in a special oven.

After that the casting process is performed using a special casting machine.



# Sequences of operation

- After casting and cooling the framework is taken out, the inflow system must be cut off.



# Sequences of operation

- The cast is grinded, polished and adapted on the former gypsum model

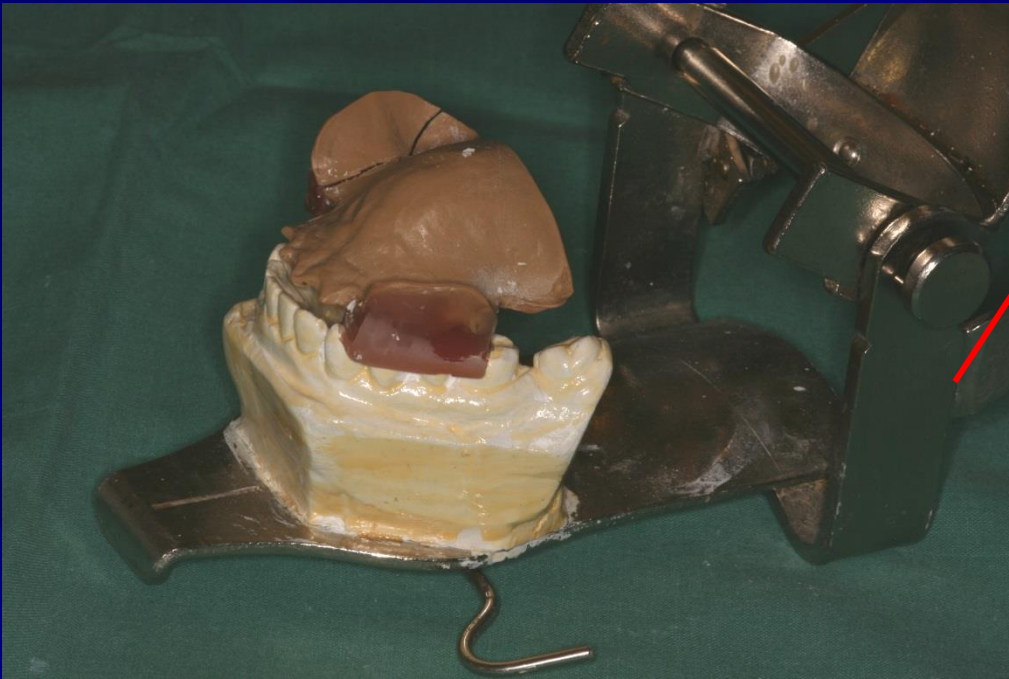


The final framework is tried out



# Sequences of operation

- The artificial teeth will be applied acc. to intermaxillary registrate in articulator.





Artificial teeth  
- acrylic

# Sequences of operation

- After trying out of the denture with wax base and teeth the denture is completed



The framework with the wax pattern of the base and teeth has been put into a flask, the wax has removed and replaced with a resin dough. The resin base is polymerized using heating.



# Sequences of operation

- The denture is finished, polished and tried in.



# Feedback

- For which classes of removable dentures is necessary to fabricate the metal framework?
- On which model is the wax pattern of the framework made?
- What is the lost wax“ method ?

# Feedback

- Which parts does the partial removable denture consist of?
- Describe the sequences of operations of these dentures. Explain the main difference between class I. and II. removable dentures.
- What is the purpose of the bite template? Which part does it consist of?
- Explain the term „investment“ .