

# Prosthetic IV.

## Removable dentures I.




# Removable dentures I.

Removable partial dentures

Complete denture



# Removable dentures I.

- Patient can remove the denture
  - Care for the denture: cleaning
  - These dentures can be anchored on the teeth or implants
  - The teeth can transfer the masticatory forces or be only for retention of the denture
  - Retention of complete denture – adhesion  on mucosa

# 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 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



# Classification of defects Voldřich

## I. Class

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)





# Way of the transfer of masticatory forces

- Tooth
- Tooth and oral mucosa
- Oral mucosa
- Implants

Tooth and/or oral mucosa/Implants



bone



# Classification of defects Voldřich

## II. Class

Reduced dental arch, then last tooth is the canine

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



# Removable partial dentures

Class I.

Dental arch with gaps (interruptions)

Teeth supported (borne) dentures

Class II.

Reduced (shortened) dental arch

Teeth and tissue supported (borne)

dentures



# Components

- Base –replaces missing part of alveol and supports arteficial teeth.



# Base (basis)

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

Different materials – metal framework  
+ resin (attached to the metal framework)  
Or resin only



# Base

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





# The material for base: Methylmetacrylate



# Components

## ■ Elements of anchorage

Clasps— casted clasps, wire clasps, combined clasps.

Anchorage supporting bar

Attachments

Telescope crowns



# Clasps

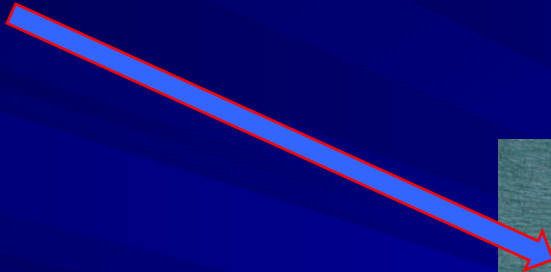
Surface retainers – they lie on the surface of teeth

Arms – one, two or three arms



# Clasps

■ One armed



# Clasps

■ Two armed



# Clasps

- Three armed clasp



# Components

- Teeth – acrylic teeth
  - porcelain teeth



# Clasps

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





# Clasps

- Two arms clasps

  - One arm for retention (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

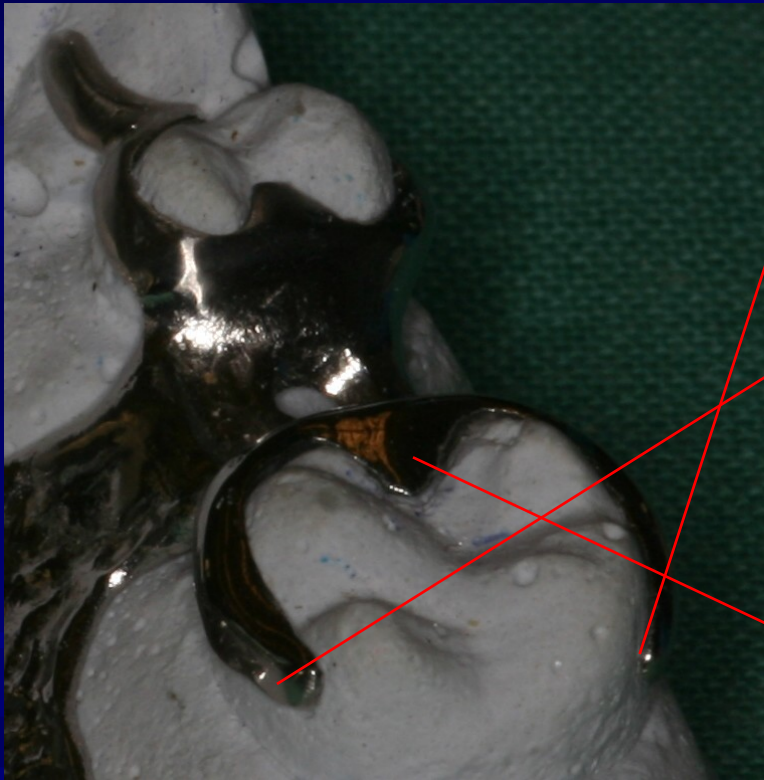


# Classification of the clasps according to the material

- Clasp made of wire and a cast part - combined
- Clasp completely cast



# 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)



# Rests

- Any unit of a partial denture that rests upon a tooth surface to provide vertical support to the denture is called a rest

Upon the occlusal surface (premolar, 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.



# Other elements of anchorage

Anchorage supporting bar

Attachements

Telescope crowns



# Anchorage supporting bar





# Attachments

Patix – male part

Matrix – female part



# Attachements on implants



# Telescope crowns



# Components

## ■ Connectors

- Major
- Minor

Connect the parts of denture



# 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

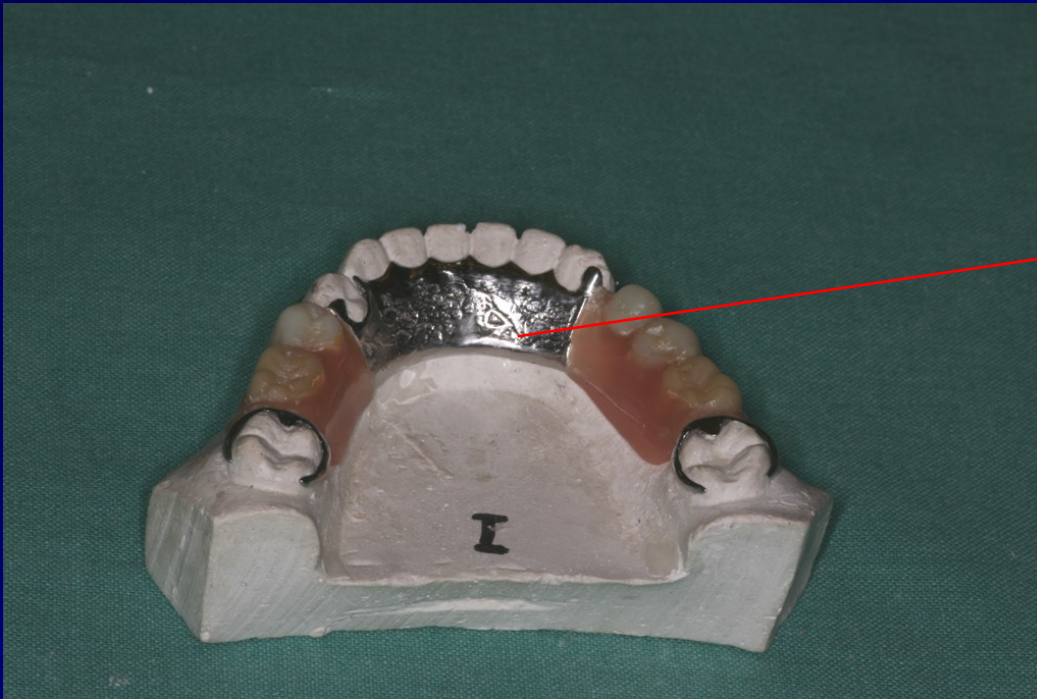


# Minor connectors

- 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

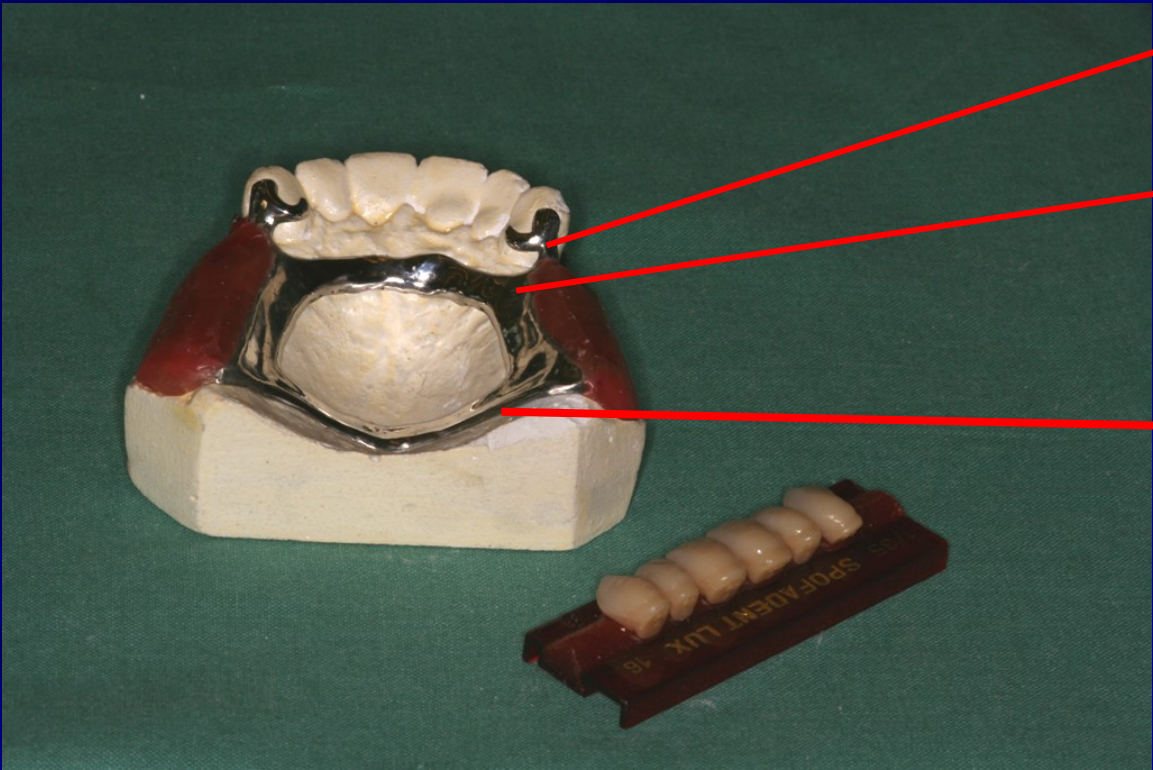






Lingual plate





Minor connector

Anterior palatal bar

Posterior palatal bar





Palatal plate

Lingual bar



# Removable dentures I. and II.

Dentures with metal  
framework



# Removable dentures – classes

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

dentures



# Removable dentures – classes

## Class III.

Single teeth

Loss of the most important abutment teeth (big gaps – more than 4 teeth)

Mostly tissue (borne) dentures, sometimes teeth supported additionally

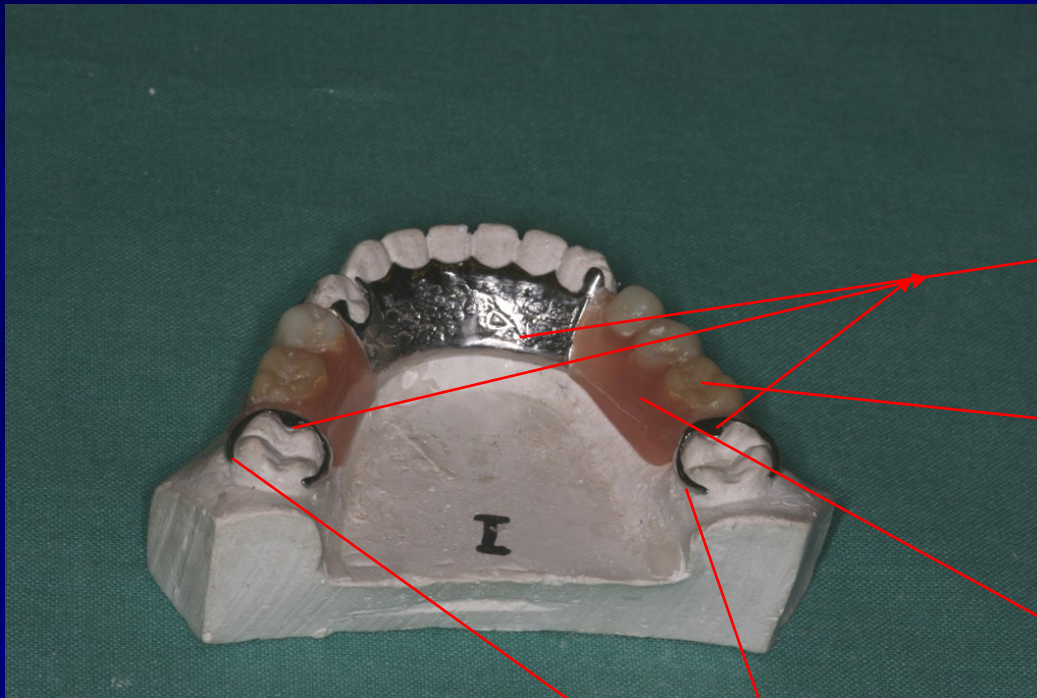
## Class IV.

Complete denture

Tissue supported (borne)



# Class I and II dentures with the metal framework



**Class I. denture  
Components:**

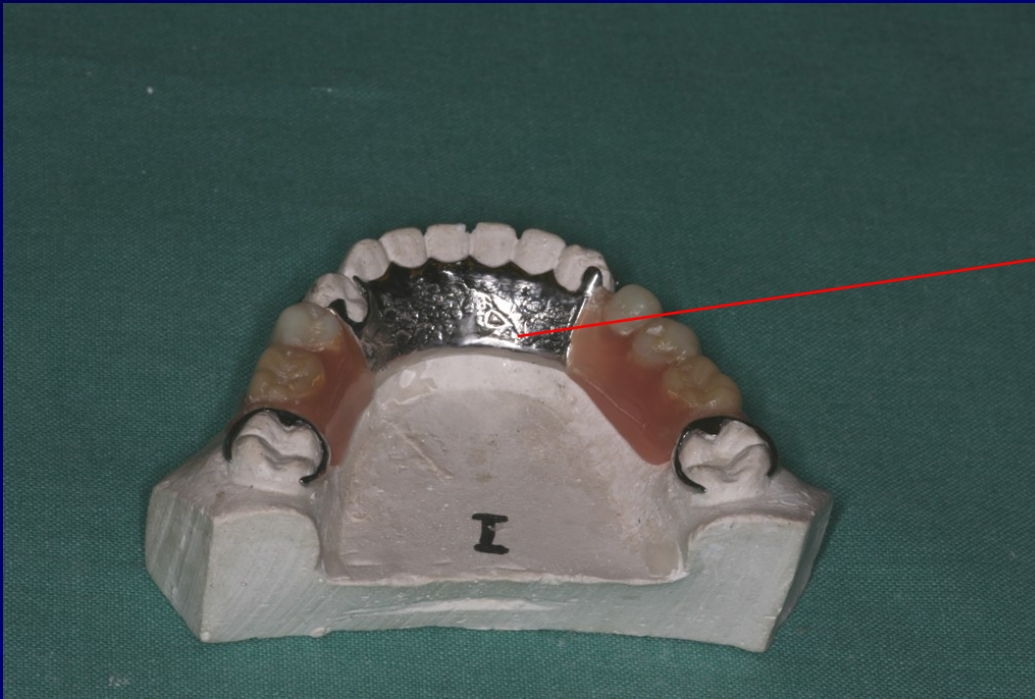
Metal framework

Arteficial teeth

Clasps



# Class I and II dentures with the metal framework

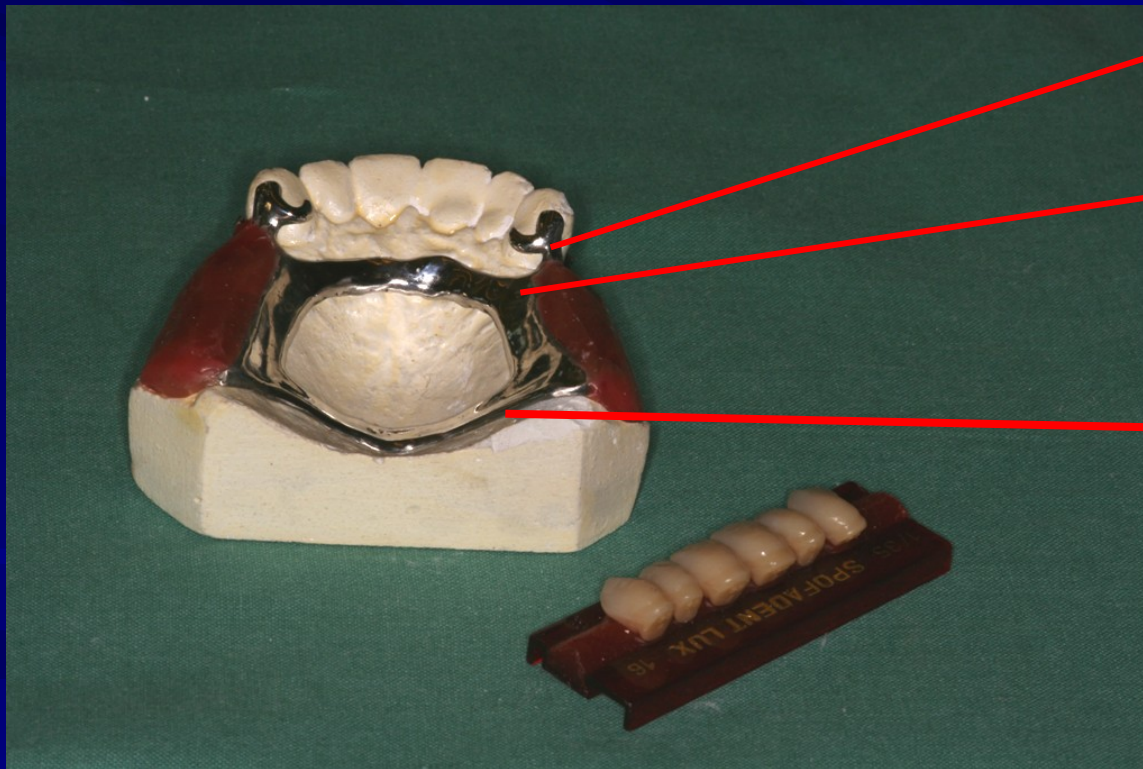


Lingual plate





# 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 !

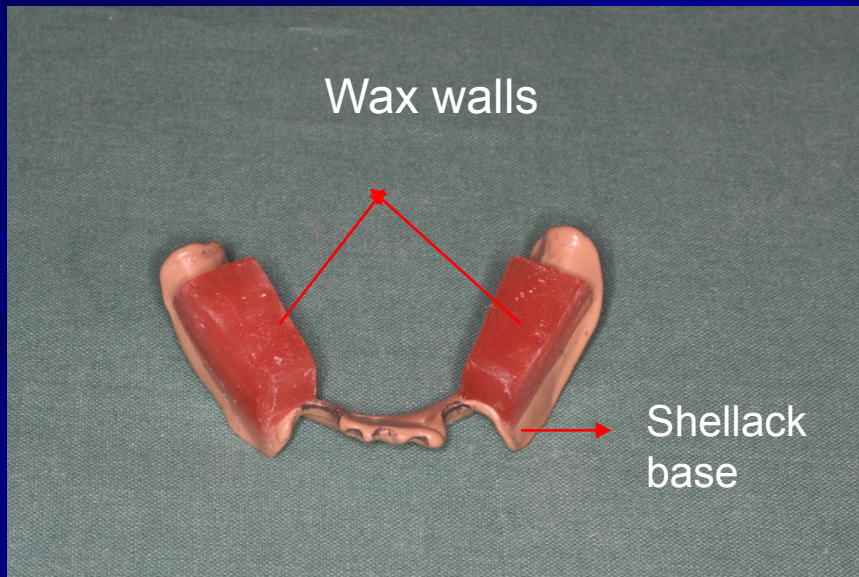


# Sequences of operations

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.

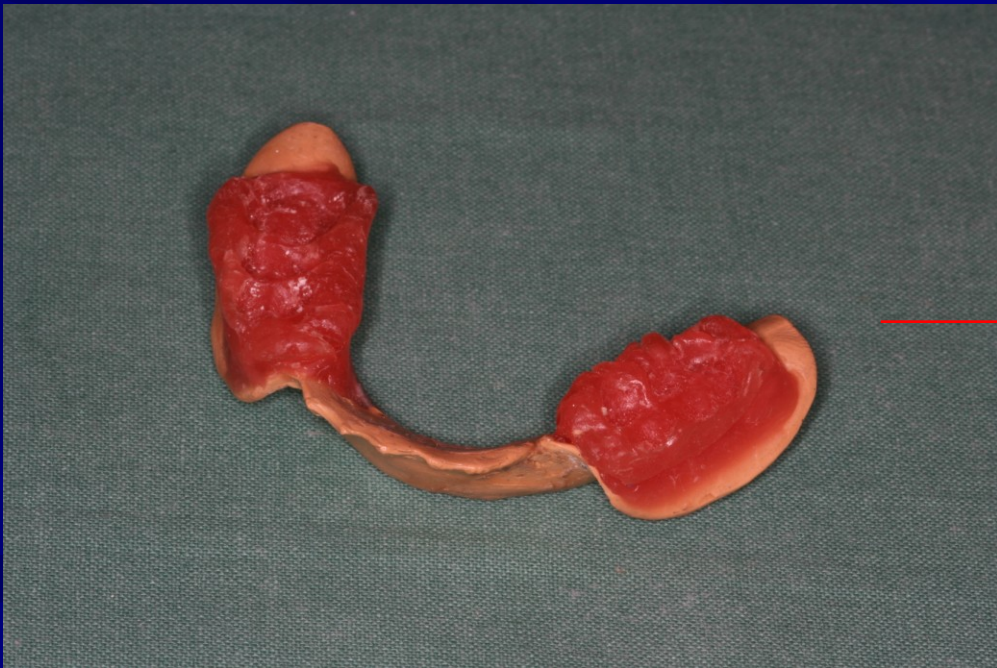


# Custom trays



# Sequences of operation

- Registration of the intermaxillary relationship.

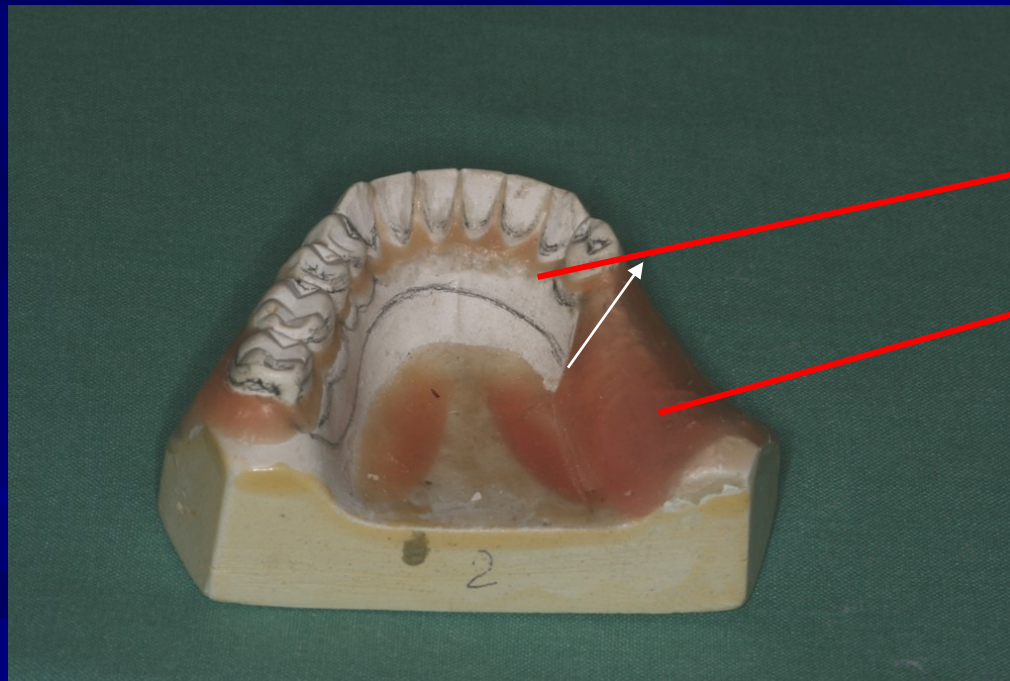


The registrate



# 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

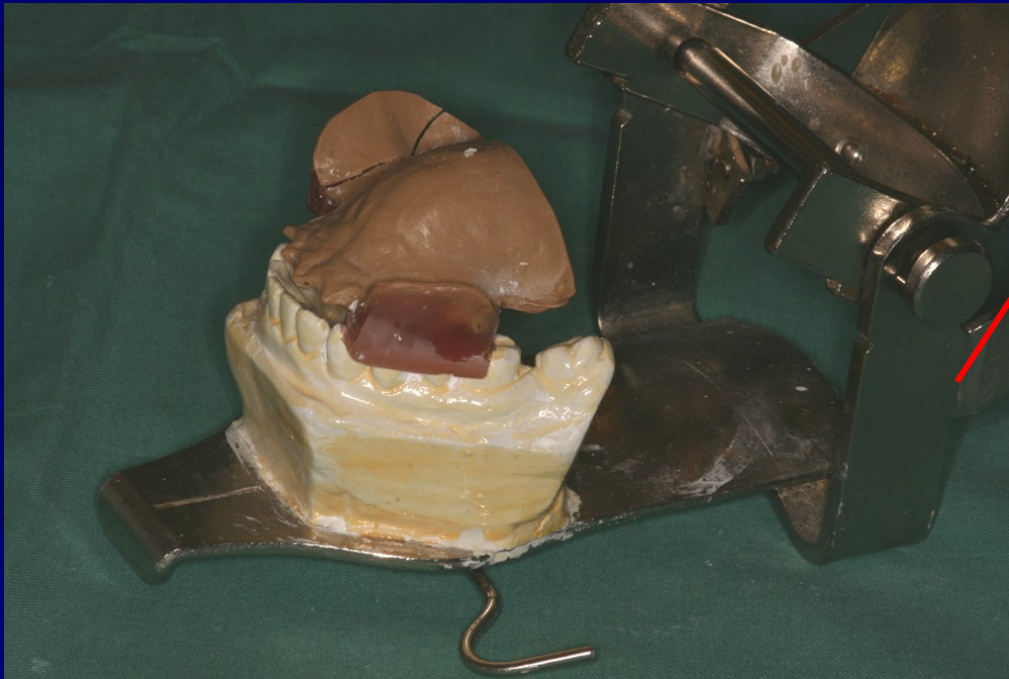


The final framework is tried out



# Sequences of operation

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





Artificial teeth  
- acrylic



# Sequences of operation

- The denture is finished, polished and tried in.



# 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.



# Final product

■ Check:

Occlusion

Retention

Function

Aesthetics

Cleaning

Check in dental office





# 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 method of „lost wax“ ?

# 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“ .