

ORIENTATION

JAW RELATION





Terminology



Adjustment of the occlusal rim



Hinge axis location technique



Jaw relation

introduction

classification



Orientation jaw relation

face bow



TERMINOLOGY :

Hinge axis :

An imaginary line through the two mandibular condyles & around which the mandible may rotate without translatory movement.

The opening axis :

It is an imaginary line around which the condyles may rotate during opening & closing movements of the mandible.

Terminal hinge position :

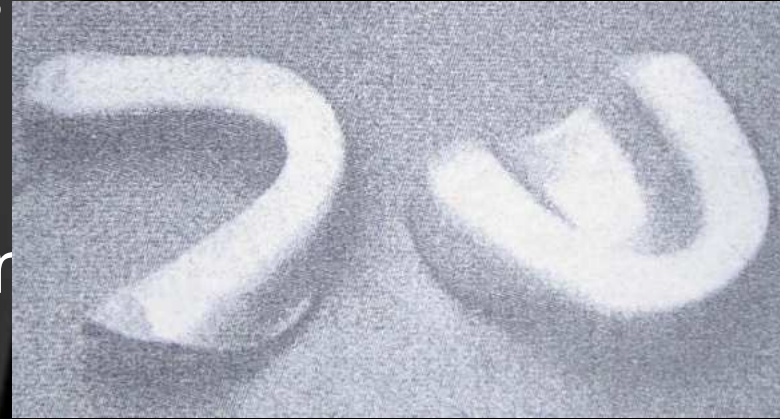
It is the most retruded hinge position. In this condyles are in definite position in fossae.



ADJUSTMENT OF THE OCCLUSAL

Factors to be considered are :

- 🦷 Lip support & labial fullness
- 🦷 Overjet
- 🦷 Check support & buccal fullness
- 🦷 Level of the occlusal plane
- 🦷 Orientation of plane of occlusion



Lip support & labial fullness :

- ❗ Wax in the flange area responsible for the labial fullness.
- ❗ Wax in the incisal edge of the occlusal rim determines the lip support.

Overjet :

- ❗ The incisal edge of the maxillary occlusal rim should be around 2mm in front of the incisal edge of the mandibular occlusal rim.



Cheek support & buccal

fullness: If the occlusal rims have excess wax buccally, the buccal musculature will produce displacement of the occlusal rim.



Teeth arranged buccally later may produce frequent cheek biting.

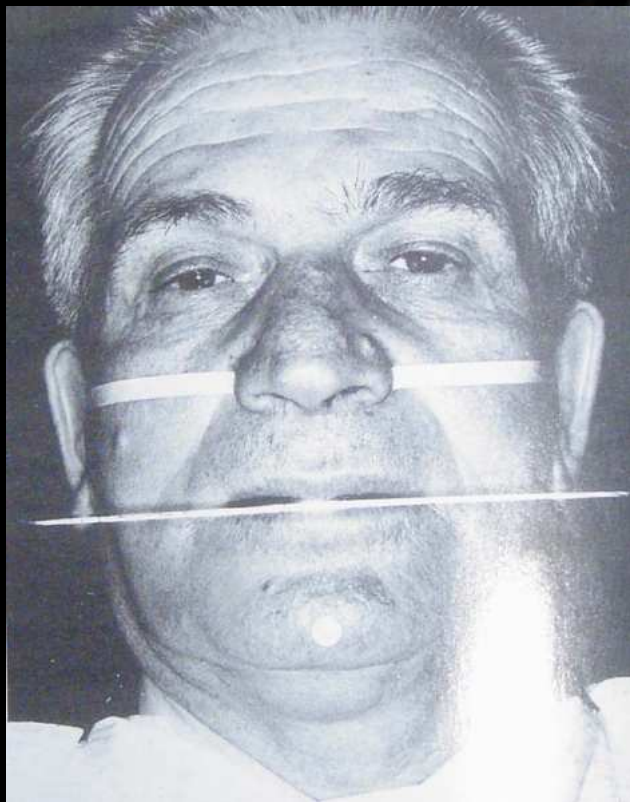
Level of the occlusal rim :

The upper occlusal rim should be reduced upto or 2mm below the level of the upper lip during speech.

The lower occlusal rim should be at the level of the lower lip & the angle of the mouth ; posteriorly at the 2/3rd the height of the retro molar pad.



Orientation of the plane of the occlusal rim :



The plane of the occlusal rim should be parallel to the plane of the maxilla.



The plane of the maxilla is determined



Anteriorly by inter pupillary line



Posteriorly by ala tragus line

The maxillary occlusal plane can be verified by using a FOX PLANE.

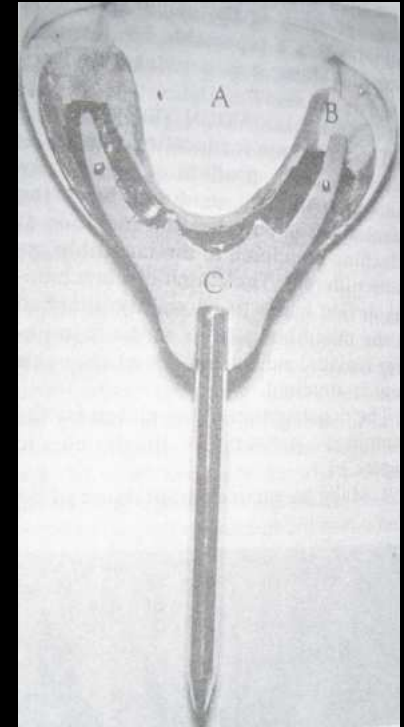
Anteriorly it should be parallel to the interpupillary line & posteriorly to the



Hinge axis location technique :

- ❖ Make an accurate impression of an mandibular basal seat.
- ❖ Pour an accurate stone cast.
- ❖ Make an accurate record base of self cure resin.
- ❖ Attach the occlusal rim to the record base.
- ❖

A specially designed bite fork to the rims with the stem parallel to the sagittal plane.





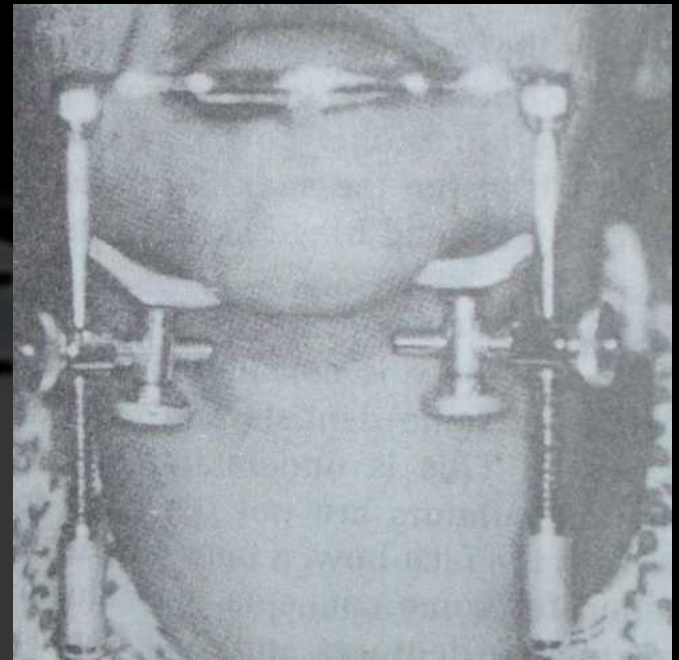
Attach this assembly to the mandible with chin clamps or chin straps.



Attach the hinge bow to the stem & adjust the styli to the location of the condyles.



Guide the patient in making hinge openings & closings.

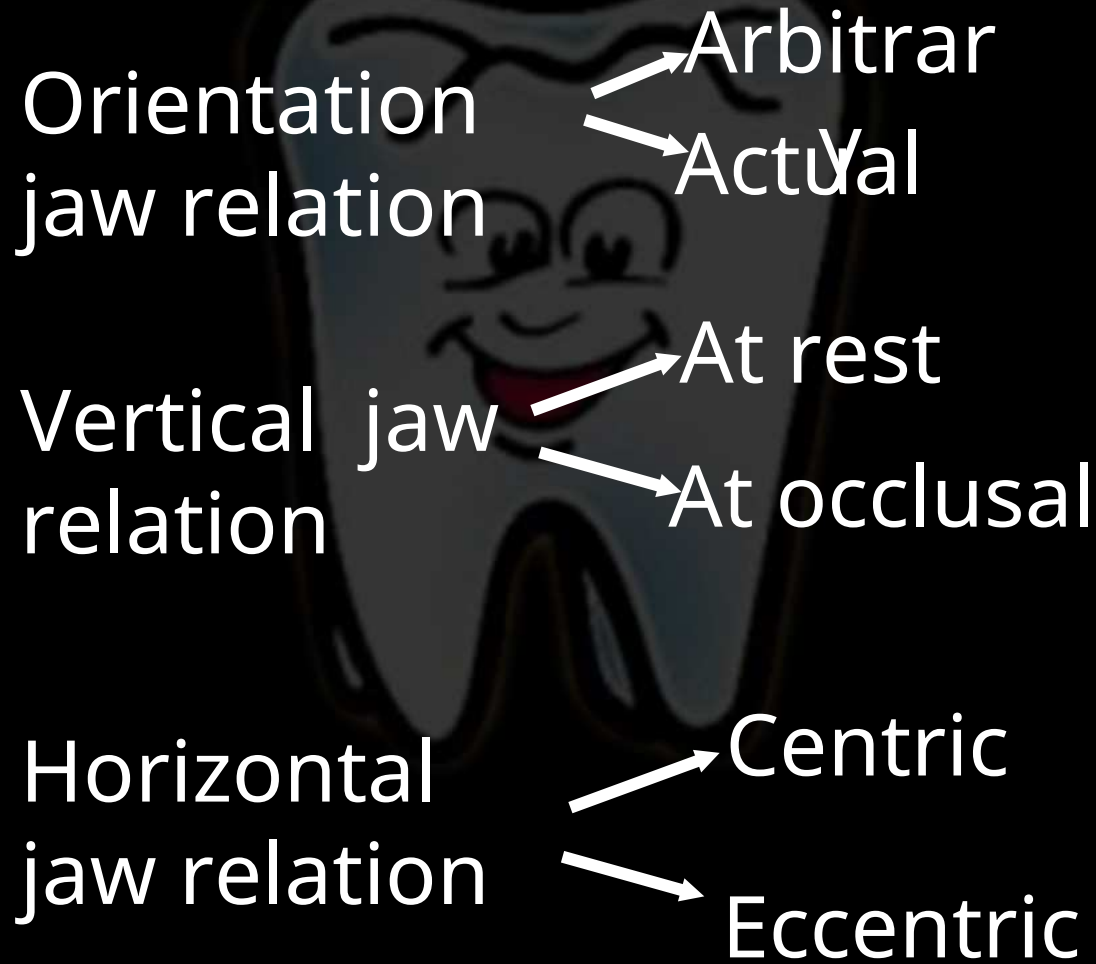


JAW RELATION :

It is defined as the any relation of the mandible - the movable part of the stomatognathic system , with the maxilla - the immovable or the fixed part.



Classification of the jaw relation :



ORIENTATION JAW RELATION :

To orient → to locate.



It is the jaw relation when the mandible is kept in its most posterior position , it can rotate in the sagittal plane around an imaginary transverse axis passing through or near the condyles.



The position of the maxilla or mandible in the skull is recorded using an instrument called the face



The face bow :

It is a caliper like device that is used to record the relationship of the jaws to the opening axis of the jaw & to orient the casts in this same relationship to the

Purpose opening axis of the articulator.


Is to orient the maxillary cast to the articulator in the same relationship to the opening & closing axis of the articulator as exists between the maxilla & the opening and closing axis in the TMJ.



Review of the face

bow :

 In 1880 HAYES used a tong like device which he called caliper.

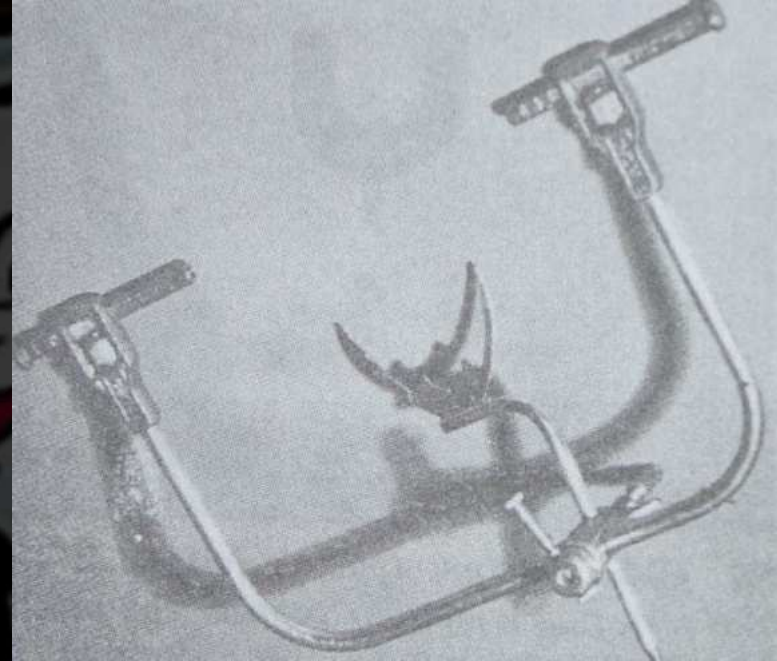
 GYSI developed an instrument similar to a face bow primarily to record the paths of the condyles.

 SNOW introduced the snow face bow.






It consists of :




- 👤 U shaped frame
- 👤 Bite fork
- 👤 Condylar rods
- 👤 Orbital pointer
- 👤 Locking device



U shaped frame :


-  It forms the main frame of the face bow.
-  All the other components are attached to the frame with the help of the clamps.
-  Extend from TMJ to at least 2- 3 inches anterior to the face

Condylar rods :

-  Two small metallic rods which are present on the either side of the frame.
-  Help in locating the hinge axis or opening axis of the TMJ.
-  Some have ear piece which fits into the external auditory meatus.



Bite fork :

 It is a u shaped plate , which is attached to the occlusal rims.


 It is attached to the frame with the help of a rod

Locking device :

 It supports face bow , occlusal rim and cast during articulation.

 It consists of transfer rod and transverse rod.

Orbital pointer:

 Used to mark the anterior reference point (infraorbital notch).

 It is present only in arbitrary face bow.



Types of face bow :

Arbitrary face bow

Kinematic face bow



Facia type



Ear piece type



Hanau face bow (spring bow)



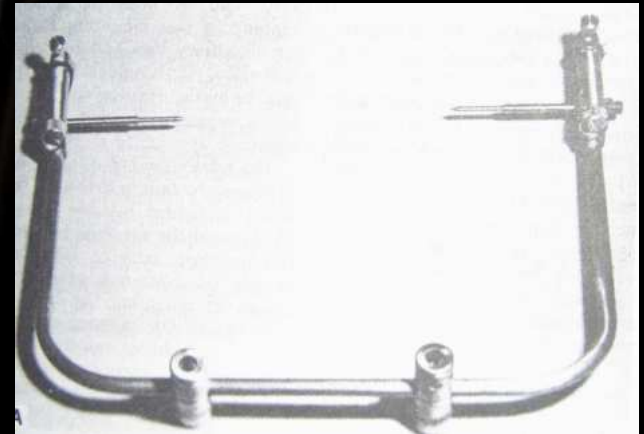
Slidematic (denar)



Whipmix



Twirl bow



Face bow transfer procedure :

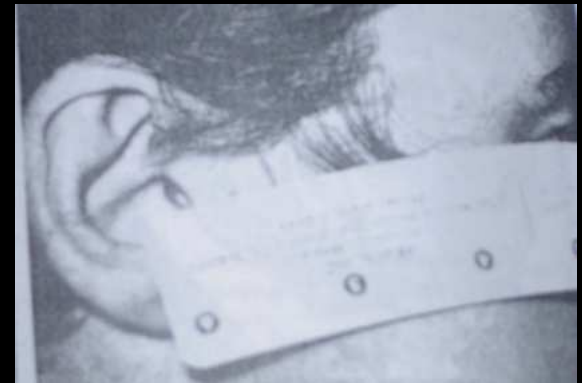
Preliminary steps :




Seat the patient in the comfortable position ; patients head should be in the upright position with the head rest supporting the occiput .



Locate the axis point by measuring 12 millimeters anterior to the middle of the tragus of the ear on a line drawn from the outer canthus of the eye to the middle of the tragus of the ear.





 Mark the points on the skin.


 Contour the maxillary occlusion rim
establish the occlusal plane ;



 place the guide lines for the arranging of teeth on the
labial section.

 Mount index on the occlusal surface in the regions of the
first molars.

 Apply a thin layer of the petroleum to the occlusal rims

 Reduce the mandibular occlusal rim to allow adequate
interocclusal distance for the fork & attached wax.

 Adjust the condyle rods to the face for centering the
bow.



Face bow record :



Soften a sheet of low fusing base plate wax and roll together in the shape of a horseshoe.



While the wax is soft , bite fork is embedded in it.



Place the prongs of the bite fork with the attached soft wax between the occluding surfaces of the occlusal rim.



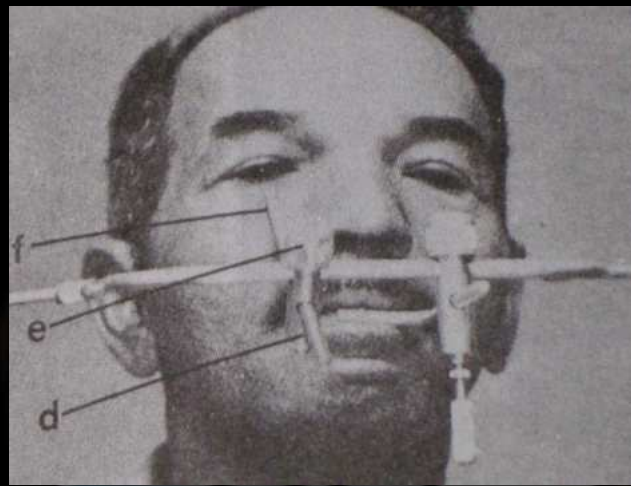
Instruct the patient to close the jaws until both occlusal rims are embedded in the soft wax.



Slide the stem of the fork through the opening in the clamp of the bow.



Adjust the condylar rods to the arbitrary



Adjust the width of the condyle rods equidistant bilaterally & secure the clamp of the bow to the stem of the bite fork.



Slide the condyle rods from the skin. extend the condyle rods back to the axis points to check any displacement.



When the infra orbital notch is used as the anterior point of reference the pointer should be placed in the clamp provided for it on the bow.



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