



**Complete denture**

# **Articulator and mounting: definition, uses & types**

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**Lecture 7**

**An articulator:**

It is a hinge-like device which can be used to position the upper and lower casts in chosen relationship to each other. There are many different designs of articulator several of which reproduce some of the movements of which the mandible is capable.

**Uses of articulators: -**

- 1-correct and modify completed restoration
- 2- Aid in the fabrication of dental restoration.
- 3- Diagnosis of dental occlusion of both natural and artificial dentition
- 4- Plan dental procedure that involves position contours and relationships of both natural and artificial as they relate to each other.

**Types of articulators:**

**1-simple hinge articulator:** -this type of articulator consists from upper and lower members joined by hinge it accept only opening onlyand closing movement.



**Advantage: -**

- 1-Simple instrument
- 2-Cheep
- 3-Rigid

**Disadvantages: -**

- 1-Simple's articulator is designed to accept only interocclusal that is in accurate.
- 2-Cannot accept face bow

**2- Semi- adjustable articulators:**

this type of articulator is most widely used articulator in dental prosthesis it consists of two members upper and lower these articulator have adjustable horizontal condylar guides and incisal pin and accept both centric relation and protrusive maxillary mandibular relation records.



**Two basic types of semi-adjustable articulators are available :**

**Non-arcon type:-**this is the position of mechanical fossa which is either in the lower member.

**Arcon type:** in this type the mechanical fossa is present in the upper member of the articulator which is anatomically more correct



**(A) Arcon semi-adjustable articulator.**

**(B) Nonarcon semi-adjustable articulator**

**Advantages: -**

- 1-Accept face bow record
- 2-Have adjustable condylar guidance better dentures.
- 3-Have adjustable incisal guidance.

**Disadvantage: -**

- 1-require more time and procedure.
- 2-moderate cost.

### **3- Fully adjustable articulators:**

this type of articulators is more complex than semi-adjustable articulator and more expensive. This produces all movement (Opening, closing, protrusive, lateral movement).



#### **Advantages:**

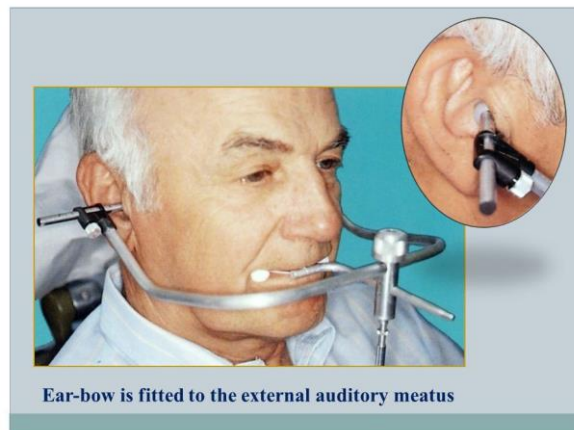
Allow very closed representation of TMJ with more accurate reproduction of condylar path Bennett shaft.

#### **Disadvantages:**

1. Time consuming to use and adjustable.
2. Require high level of skill and understanding from both dentist and technician.
3. Expensive instrument.

#### **Face bow:**

Its caliper like device that used to record the relationship of the jaws to the t.m.j or the opening axis of the jaw and to orient the casts in this same relationship to the opening axis of the articulator.

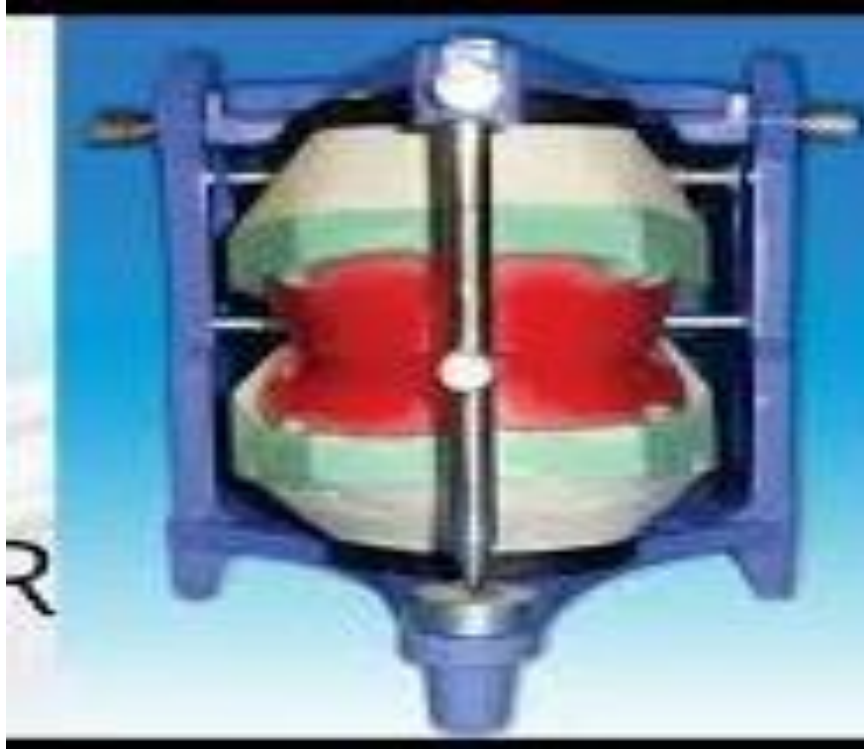
**Face bow consist of :**

- 1- U-shaped frame: that is large enough to extend from region of TMJ to position 5-7 cm in the front of the face wide enough to avoid contact with the side of the face.
- 2- Condylar rod: the part that contacts the skin over the TMJ.
- 3- The face bow fork: attached the occlusal rim and it's attached to the face bow by means of locking device.

**USES OF THE FACE BOW:**

- 1- Face bows are used to record the anteroposterior and mediolateral spatial position of the maxillary Occlusal surfaces relative to this transverse opening and closing axis of the patient's mandible
- 2- The face bow is then attached to the articulator to transfer the recorded relationship of the maxilla by ensuring that the corresponding cast is attached in the correct position relative to the hinge axis of the instrument. After the maxillary cast has been attached to the articulator.

**Mounting:** means the laboratory procedure by which the upper and lower base plate and rims with their casts are attached to the articulator and then the teeth are setup in centric occlusion.



**Requirement and procedure of mounting:**

1. The midline should be marked of the upper cast is determined as the midline of incisive papilla
2. V- shaped notches should be carved in the base of the cast
3. The surface of the base should be smoothed with sand paper and then separate medium applied for easy separation
4. The occlusal rim and denture base should well studded to the cast and then sealed by the wax to the cast
5. Placing the upper cast and occlusion rim on the occlusal plan table and the cast should be positioned so that the midline of the occlusion rim aligned with the tip of pen anteriorly and the line drawn on the base.

6. Plaster should be placed on the top of the cast so the notches should be carefully filled then The upper jaw member closed
7. After the plaster has set the articulator should be placed upside down to mount the lower cast. The lower cast should be related to the upper cast and then they should firmly joined together with steel rods and sticky wax
8. The plaster should be placed on the lower cast base using similar technique to that used for the upper cast.

**Errors of mounting:**

- 1- Record bases are not properly setted and scared to the casts during mounting.
- 2- Occluding rims not keyed for correct orientation.
- 3- Wrong transference of mid line to the articulator which mean shifting of mid line
- 4- Movement of cast during mounting
- 5- Face bow records defected
- 6- Incisal pin not properly close.