



Fixed orthodontics appliance

د. مُنَاد جِهَاد عاشج



Fixed orthodontics appliance

- Definition
- Advantages and disadvantages of fixed orthodontic appliances
- Indications
- Components
- Placement of the appliance



Fixed orthodontics appliance

□ Definition

Fixed orthodontic appliances are rigidly attached to the teeth by means of bands or rings of metal, which are closely adapted and cemented to the teeth. Patients cannot remove them by themselves.



Indications

Correction of skeletal discrepancies.

Perform all types of tooth movement

- * **Maintain a high level of oral hygiene.**
- * **Avoid hard or sticky foods.**
- * **Co-operation**
- * **Appliance adjustment.**

Advantages & Disadvantages

Advantages

Fixed appliances offer better control and to a large extent lessen the need for patient cooperation.

It is easy to bring about various types of tooth movements, e.g. tipping, bodily movement, rotation, intrusion and extrusion.

As multiple tooth movements are possible simultaneously, the treatment duration is considerably reduced.

More precise tooth movements and correction of occlusion is possible using fixed appliances.

used to treat most malocclusions, including very complicated ones.

These appliances offer better control over anchorage.

Disadvantages

Oral hygiene maintenance is more difficult.

These take up more chairside time as these are time consuming to fix and adjust.

Aesthetically unpleasing, unless modern tooth-coloured appliances or lingual orthodontics are used.

These require special training of the operator and are invariably handled by specialized orthodontists.

Damaged appliances that apply misdirected forces cannot be removed by the patient.

More expensive.



Fixed orthodontics appliance

□ Components

The components/parts of fixed appliances are broadly classified into:

- | | |
|------------------------|--------------------------------------|
| Parts which give force | : Parts do not give force but remain |
| A. Active components | B. Passive components |
| i. Separators | i. Bands/band materials |
| ii. Archwires | ii. Brackets |
| iii. Springs | iii. Buccal tubes |
| iv. Elastics | iv. Lingual attachments |
| v. Expansion screws. | v. Lock pins. |
| | vi. Ligature wire |

each component has a function.



Fixed orthodontics appliance

Active components

- i. Separators
- ii. Archwires
- iii. Springs
- iv. Elastics
- v. Expansion screws.



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Fixed orthodontics appliance

Active components

Separators

Metal separators

Elastic separators







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Archwires

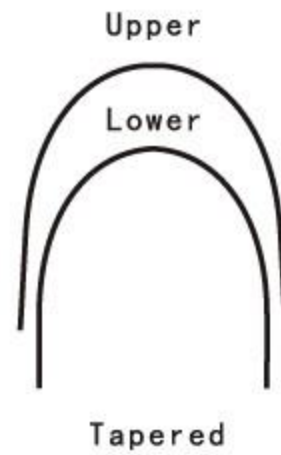
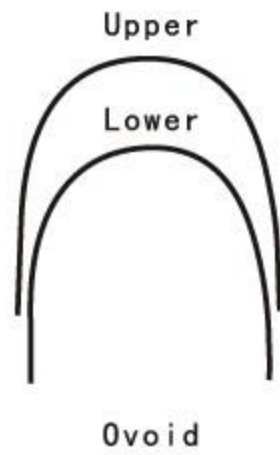
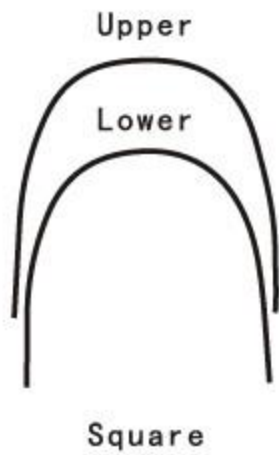
2. Archwire

Stainless steel •

Nickel titanium

Beta titanium

Composite





NiTi ArchWire

Upper

Lower

Denxy Orthodontic





Fixed orthodontics appliance

Springs





Fixed orthodontics appliance

Elastics



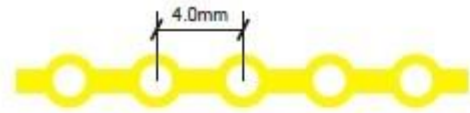
10pack
400stick
10400pcs



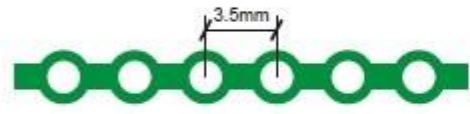


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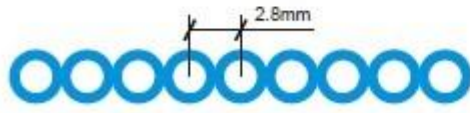
Power chain



LONG



MEDIUM



SHORT





Fixed orthodontics appliance

Expansion screws





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B. Passive components Bands/band materials

the rule in contemporary orthodontics is that bonded attachments are almost always preferred for anterior teeth and premolars. Bands usually are preferred for first molars, especially if both buccal and lingual attachments are needed





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B. Passive components

Bands/band materials

Band: a. Bands are passive components that help in fixing the various attachments into the teeth. (by welding)

b. They are available in various sizes to suit different teeth & made of soft stainless steel.

Bands can be used on teeth other than molars, mostly due to:

1-frequent failure of bonded attachment.

2-de-rotation (couple force system), correction of crossbite (buccal and lingual attachment).

3-teeth receive heavy intermittent force *Heavy intermittent forces against the attachments*





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B. Passive components
Brackets



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B. Passive components

Brackets

Begg technique

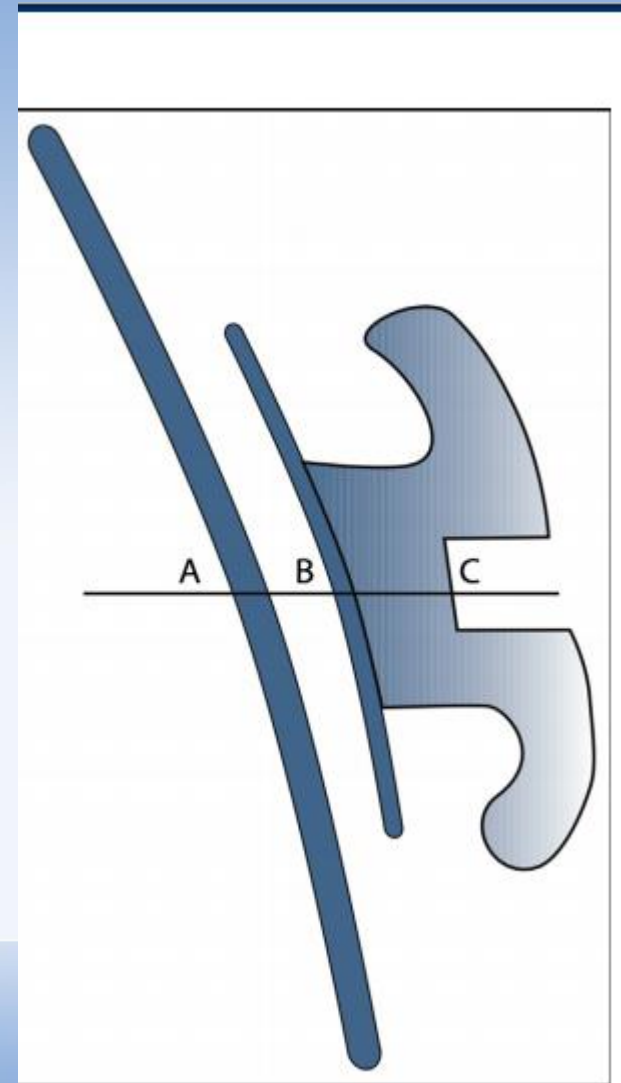
edgewise technique

Andrews' straight wire appliance



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B. Passive components
Brackets



Angle's edgewise appliance



The Begg appliance

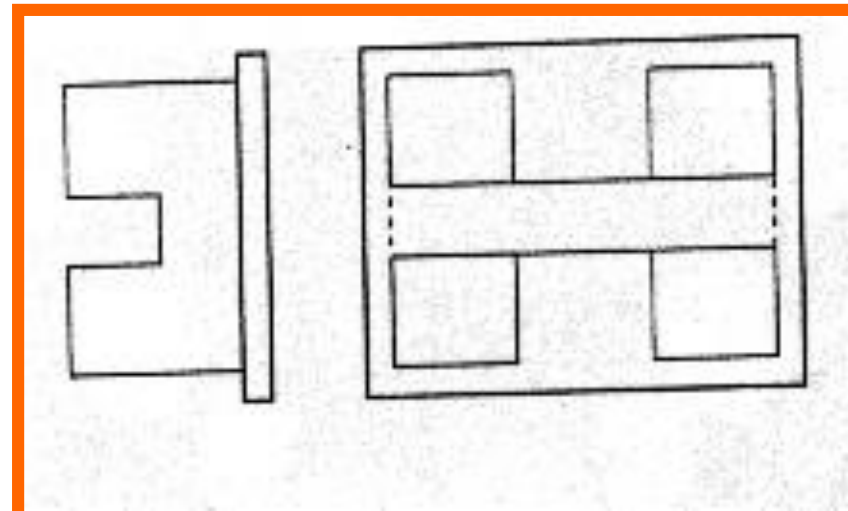
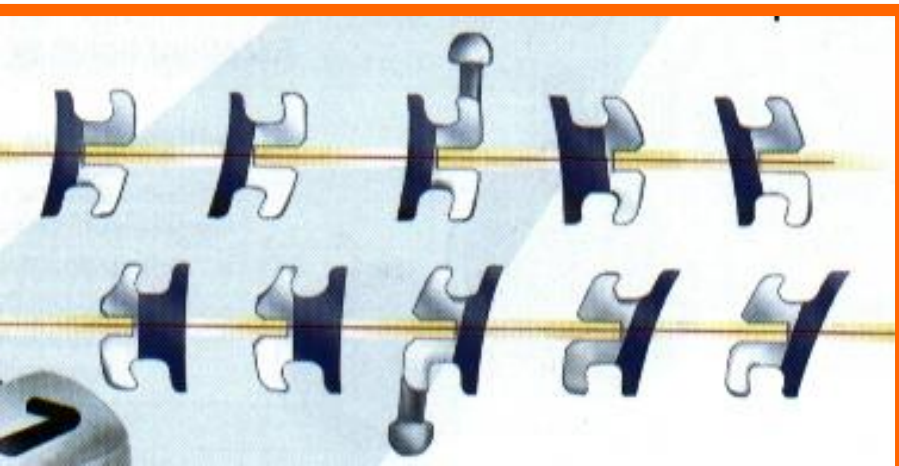
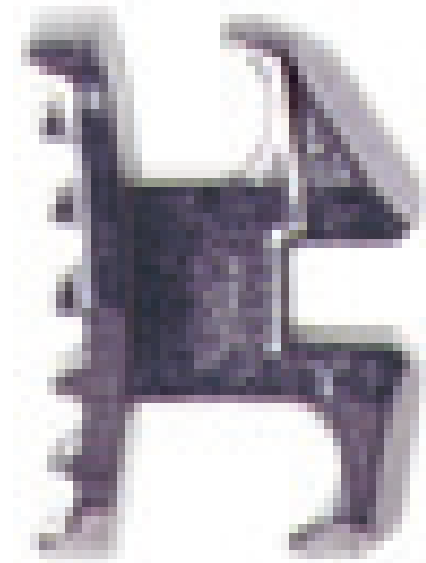


Contemporary Bracket

*round the back of the bracket

*Alteration in bracket slot dimensions

*Variation in bracket thickness



Self-ligating system









Lingual appliance





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B. Passive components
Buccal tubes





Fixed orthodontics appliance

B. Passive components iv.
Lingual attachments





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B. Passive components
vi. Ligature wire





Fixed orthodontics appliance

- ❑ Placement of the appliance

