Arrangement of posterior artificial teeth

Posterior teeth are set up in tight centric occlusion. The mandibular teeth are set in the wax occlusion rim over the residual ridge in their ideal buccolingual position and the maxillary teeth are set in tight centric occlusion with them regardless of their buccolingual position. The objective here is to have the intercuspatation of the posterior teeth so precise that any deviation of this occlusion in the mouth will be easily detected.

Standardized parameters
1. Curve of Wilson' as transversal compensating curve.
2. Curve of Spee' as sagittal compensating curve.
3. Optimum intercuspidation of the antagonists.

Curve of Wilson
Transversal compensating curve. It runs frontally (transversally), touching the cusp tips of the posterior teeth. In the lower arch, it is produced by an even inclination of the right and left molars towards the lingual, corresponding to an inclination towards the buccal in the maxilla. When setting-up complete dentures, the teeth should be positioned along this curve

Curve of Spee
Sagittal compensating curve. Its bow-shaped line of occlusion in dentition. Spee described it as the "shifting path" of the mandible. The segment of the circle drawn has its center in the orbital cavity.

The guide lines used in arrangement of posterior teeth:
1. The line of the crest of lower residual ridge. Which extend between the middle of retromolar pad, and tip of lower canine, the central grooves of the lower posterior teeth should coincide with this line.
2. The line extending between the tip of lower canine and upper 2/3 of retromolar pad will determine the height of lower posterior teeth.
1. **Arrangement of maxillary posterior teeth:**

   **a. Maxillary premolars:**
   1. Premolars are set vertically to occlusal plane.
   2. Facial cusp of maxillary 1\textsuperscript{st} premolar touch the occlusal plane while the lingual cusp is raised from occlusal plane approximately 1/2 mm.
   3. Facial and lingual cusp of maxillary 2\textsuperscript{nd} premolar touch the occlusal plane.
   4. The facial cusp of maxillary 1\textsuperscript{st} premolar should be seat into the embrasure between the mandibular 1\textsuperscript{st} and 2\textsuperscript{nd} premolars.
   5. Lingual cusp should be over the crest of the ridge.

   ![Compensating Curve](image)

   ![Maxillary Premolars](image)

   **b. Maxillary molars:**
   1. The inclination of maxillary molars are mesially and slightly lingually to create a 6 degree upward curve.
   2. Mesiolinguual cusp of maxillary 1\textsuperscript{st} molar should touch the occlusal plane and the lingual cusps are over the crest of the mandibular ridge.
   3. The mesiobuccal cusp of upper 1\textsuperscript{st} molar should rest in the buccal groove of the lower 1\textsuperscript{st} molar, and the mesiolinguual cusp should seat into the central fossa of lower 1\textsuperscript{st} molar.
   4. Maxillary 2\textsuperscript{nd} molar are set with no cusp touches the occlusal plane. All the lingual cusps are over the crest of the mandibular ridge.
   5. Facial cusps of maxillary teeth form a gentle curve, while the lingual cusps form a similar curve about 1/2 mm below the facial cusps.
   6. Use a template to check the buccal alignment of canine, premolars and mesial buccal cusp of maxillary 1\textsuperscript{st} molar should touch the template, while the distobuccal cusp not touch.
   7. To check the buccal alignment of maxillary posterior teeth, all four cusps of maxillary molars touch the template while the premolar do not touch the template.

   ![Compensating Curve](image)

   ![Maxillary Molars](image)
2. **Arrangement of mandibular posterior teeth**

1. The Mandibular 1st molar is first set into centric occlusion.
2. Mesio-buccal cusp of maxillary 1st molar fit in to the buccal groove of mandibular first molar.
3. The mesioligual cusp of Mandibular 1st molar fit into the central fossa of the maxillary first molar.
4. Set the mandibular 2nd molar, the mesio-buccal cusp of maxillary 2nd molar fit in to the buccal groove of mandibular 2nd molar.
5. Then set mandibular 2nd premolar, its cusp tip should be positioned in the embrasure between maxillary 1st and 2nd premolars.
6. The last tooth are mandibular 1st premolar which should be position in the embrasure between maxillary canine and maxillary 1st premolar.
7. Mandibular premolars follow the curvature of the canine.
8. Mandibular posterior teeth are set on or slightly lingual to the crest of the ridge.
Common errors in arrangement of teeth.
1. Setting mandibular anterior teeth too forward in order to meet maxillary teeth.
2. Failure to make the canine the turning point of the arch.
3. Setting mandibular 1st premolar to the buccal side of the canines.
4. Failure to establish the occlusal plane at the proper level and inclination.
5. Establishing the occlusal plane by an arbitrary line on the face.
6. Lack of rotation of anterior teeth to give a narrower effect.
7. Setting the mandibular posterior teeth too far to the lingual side in the 2nd molar region which cause tongue interference and mandibular denture displacement.