
(rotational)
PANORAMIC
RADIOGRAPHY

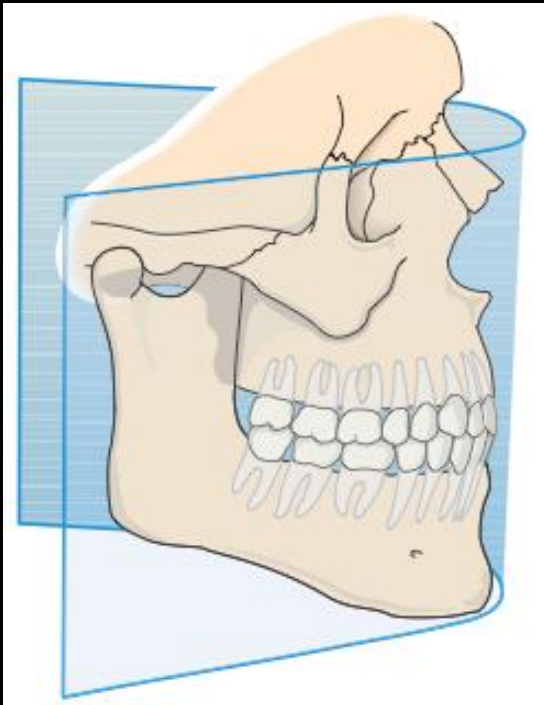


OPG



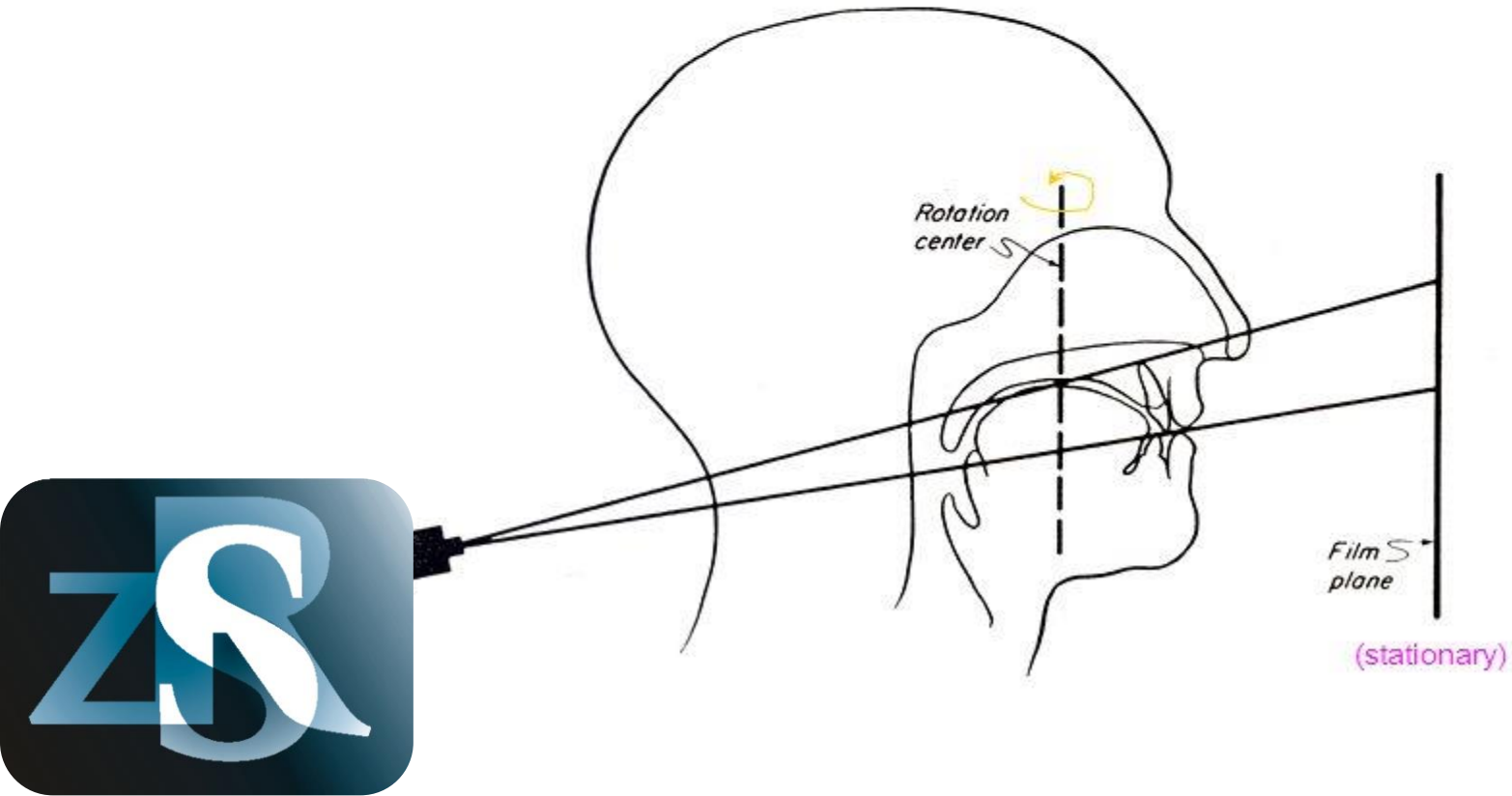
PANORAMIC RADIOGRAPH

„LAYER IMAGE OF CURVED
STRUCTURES“



Principle of Projection in the Vertical Dimension

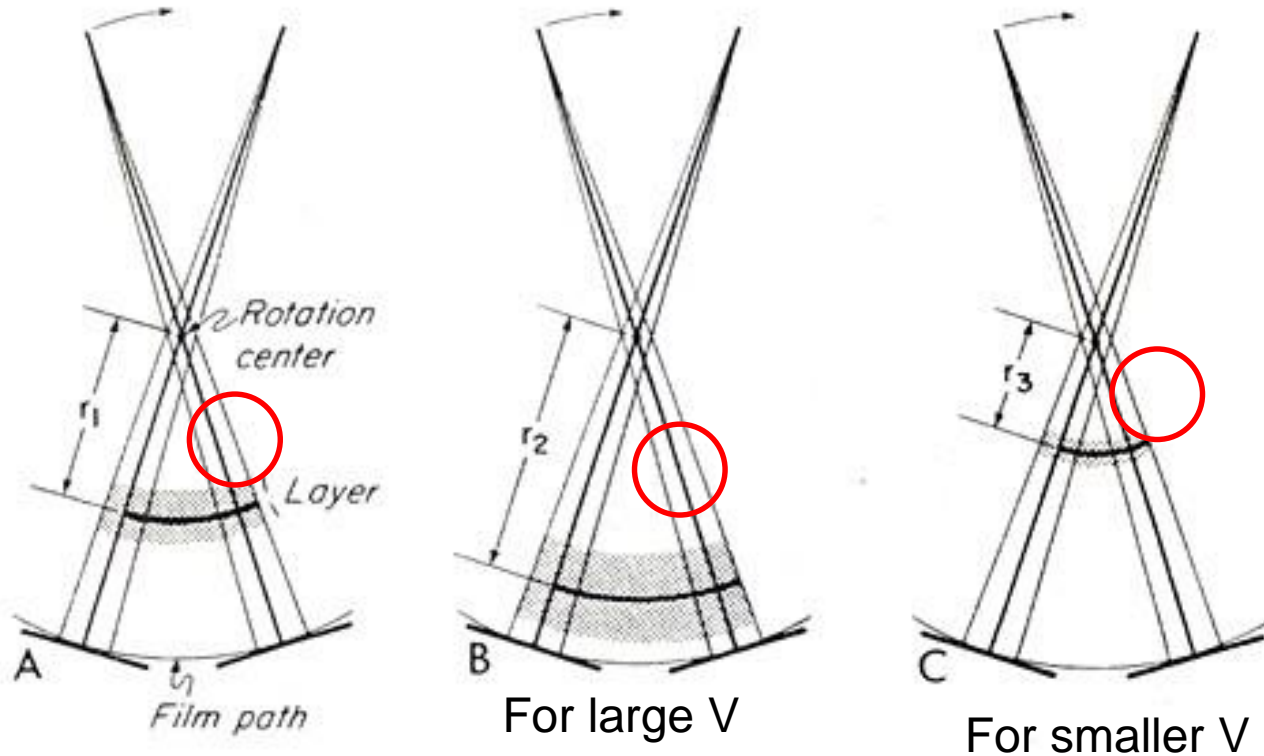
- The vertical dimension is **unaffected** by the rotation of the beam in the horizontal plane.
- In this dimension, the **X-ray source** serves as the functional focus of the projection.



The distance from the rotation center of the beam to the central plane of the image layer is called the **EFFECTIVE PROJECTION RADIUS**.

The thickness of the layer depends on the length of the effective projection radius (the shorter the radius, the thicker the layer).

Thus, an altered film speed relative to the beam not only changes the position of the layer but, indirectly, also the thickness of the layer.



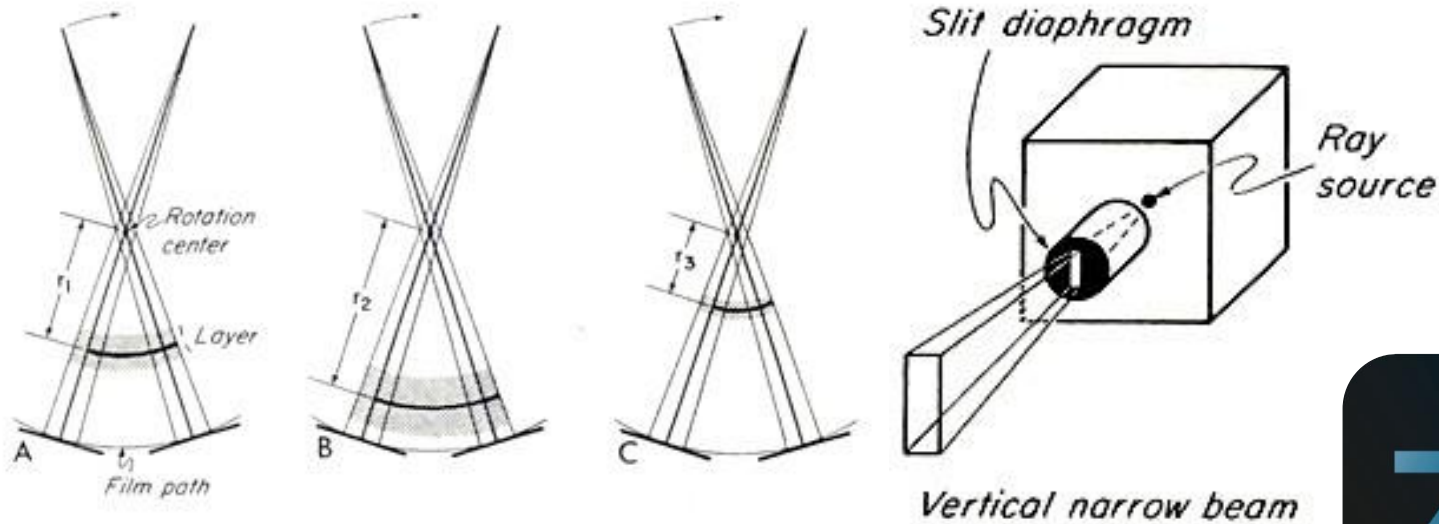
The layer thickness depends on several parameters besides the effective projection radius.

Among this, the width of the beam is most important.

The layer thickness is inversely proportional to the width (= focal spot size) of the beam (the layer thickness doubles if the beam width is reduced by one half).

The thickness depends on the length of the effective projection radius

The layer formation is a side effect resulting from the use of a beam of finite width to obtain an amount of radiation sufficient to expose the receptor.



ADVANTAGES

- Broad coverage of facial bone and teeth
- Low patient radiation dose
- Convenience of examination for the patient (films need not be placed inside the mouth)
- Ability to be used in patients who cannot open the mouth or when the opening is restricted e.g.: due to trismus
- Short time required for making the image
- Patient's ready understandability of panoramic films, making them a useful visual aid in patient education and case presentation.
- Easy to store compared to the large set of intra oral x-rays which are typically used.



DISADVANTAGES

- The examination does not reveal any anatomical details
- Heterogeneous enlargement of structures
- Geometric distortions
- Overlapping of anatomical structures





INDICATIONS

- Overall evaluation of dentition
- Search for intraosseous pathology (cysts, tumors, infections etc.)
- Gross evaluation of temporomandibular joints
- Evaluation of position of impacted teeth
- Evaluation of eruption of permanent dentition
- Dentomaxillofacial trauma
- Developmental disturbances of maxillofacial skeleton



FUNCTIONS

STAW PRAWY - ZAMKNIĘTE USTA

A



STAW PRAWY - OTWARTE USTA

B



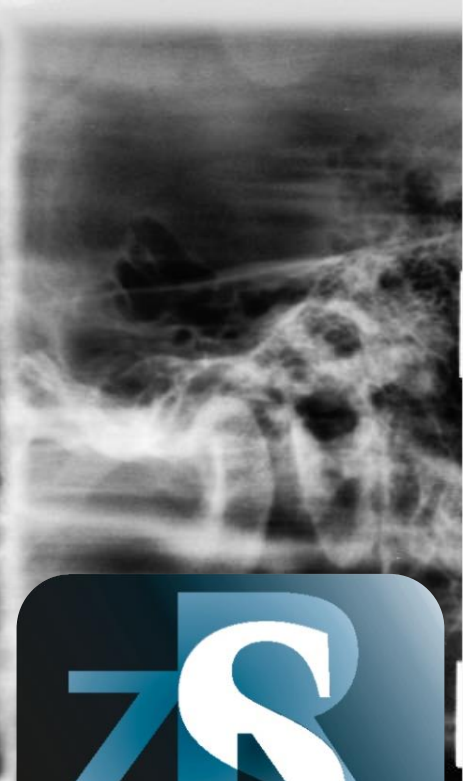
STAW LEWY - OTWARTE USTA

C



STAW LEWY - ZAMKNIĘTE USTA

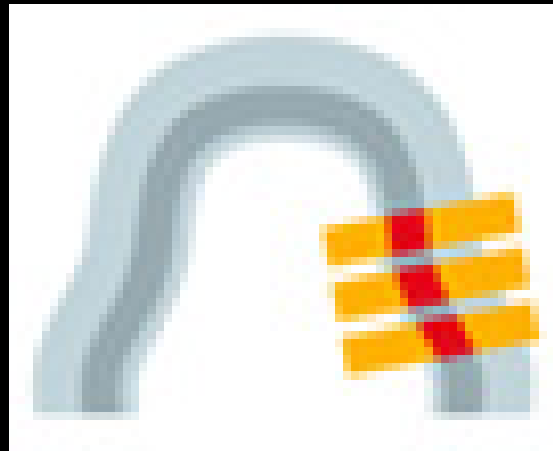
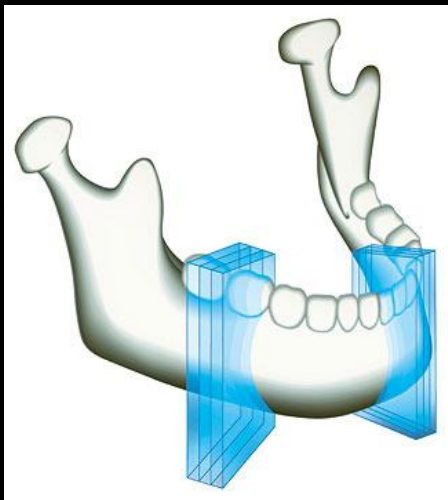
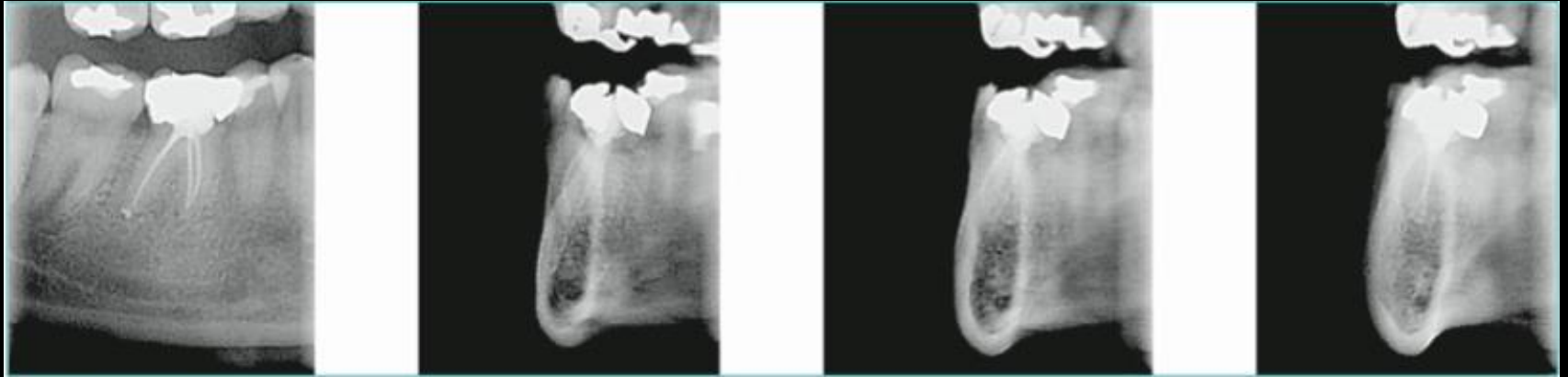
D



FUNCTIONS



FUNCTIONS



FUNCTIONS



