

Dental Radiograph Positioning “Cheat Sheet”

Introduction:

Think of dental radiographs as a “shadow” of the root of the tooth

You need the sensor to “catch” the shadow

The x-ray generator is like the sun in the sky, casting that shadow onto the sensor



When the sun is high up in the sky, around noon, your shadow is going to be foreshortened, or smaller than the actual object.



When the sun is setting and low in the sky, your shadow is going to be elongated, or much larger than the actual object.

Why is that important?

If you take an x-ray and your image looks deformed, very short and stubby, this means you have foreshortened the image. The generator’s tube head is too high and you have to lower it.

***Foreshortening an x-ray can hide bone loss, because you are trying to fit the whole tooth into a space that is too small.**

If you take an x-ray and your image looks too long and skinny, this means you have elongated the image. The generator’s tube head is too low and you have to raise it.

***Elongating an x-ray can create the appearance of bone loss, because you are making that tooth longer and it looks farther away from the bone than it really is.**

Tube Head Positioning

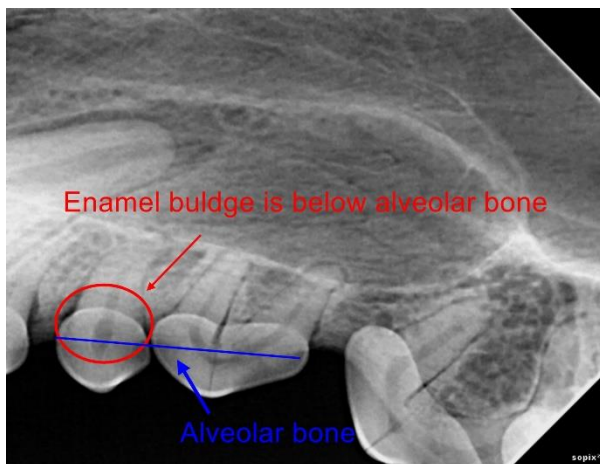
***Remember: The tube head is like the sun in the sky, it's position determines the length of the "shadow" ***



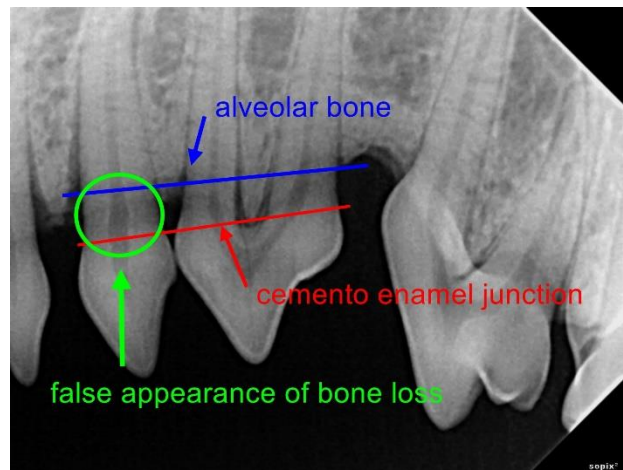
Having the tube head too high up (sun in sky at noon) will cause the radiograph to be foreshortened. In that case, lower the "sun".

Having the tube head too low, (sun at 6pm) will cause the radiograph to be elongated. In that case, raise the "sun".

Example:



Example:



Sensor Placement (Maxilla)

PATIENT IS STERNAL

Cord is always rostral, or coming out of the mouth

Cut corners of sensor are always caudal, or towards the back

Incisors:



Sensor is flat, placed straight into the mouth. Crowns of the incisors are on the edge of sensor.

Sensor is not tilted or angled.

Plenty of sensor space to catch the “shadow” of those roots.

MAXILLA

Incisors

PATIENT IS STERNAL



Tube head is at about a 45-degree angle or 1 o'clock.

Tube head is close to patient.

Aimed at roots of incisors, making sure the radiation hits sensor

Example:



Canines



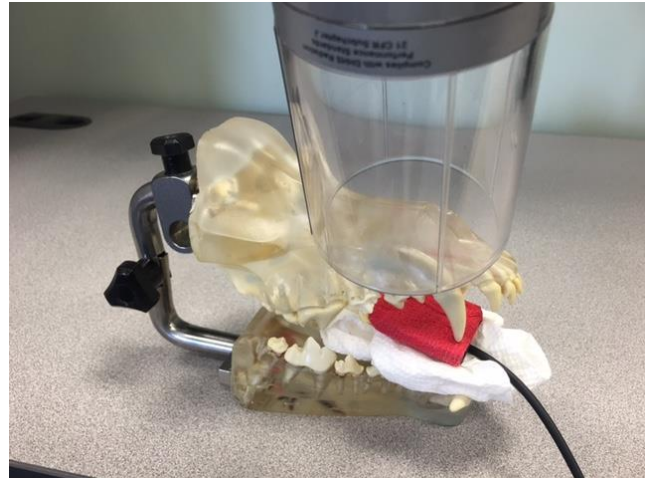
Sensor is still on a flat plane.

Angled slightly towards the inside of the mouth.

Canine is on the corner of sensor.

Having a paper towel or gauze in the mouth with the sensor will help keep the sensor in place

Canines



Tube head is at the same 45-degree angle, or 1 o'clock as it was on the incisors.

Shoot radiograph from the side, not the front.

Aim at second premolar. The apex of the canine is almost always located directly above second premolar.

Inadvertently, you will most likely get the first two premolars (depending on the size of the dog) in this shot as well.

Example:



Premolars



Sensor is still on flat plane, straight back.

Crowns are on outer edge of sensor.

No excess sensor hanging out of the mouth.

PM 1, 2 and 3 are on sensor.

Premolars



Tube head is at a 60-degree angle, or about 2 o'clock. Slightly lower than the incisors and canine.

Shoot radiograph from the side.

Aim at the roots, not the crowns.

Depending on the size of dog, this may be two shots. Dogs with long snouts, such as Dobermans and Greyhounds will probably require two separate radiographs.

Example:

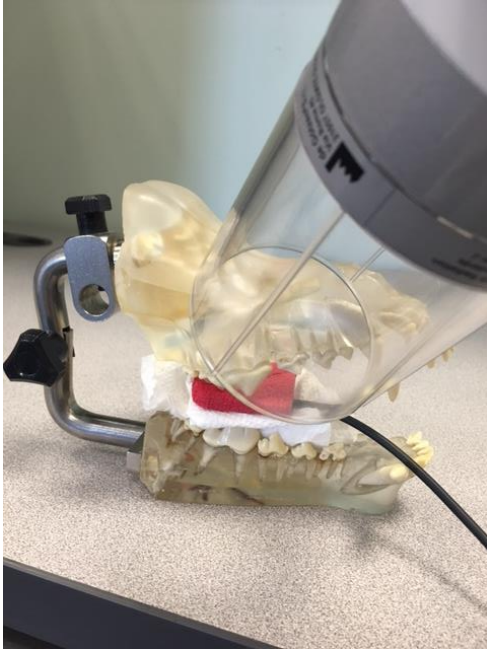


Carnassial



Sensor is on flat plane, pushed straight back into mouth.
Crown of carnassial is on the outer edge of the sensor.
Minimal excess sensor space outside of mouth.

Carnassial



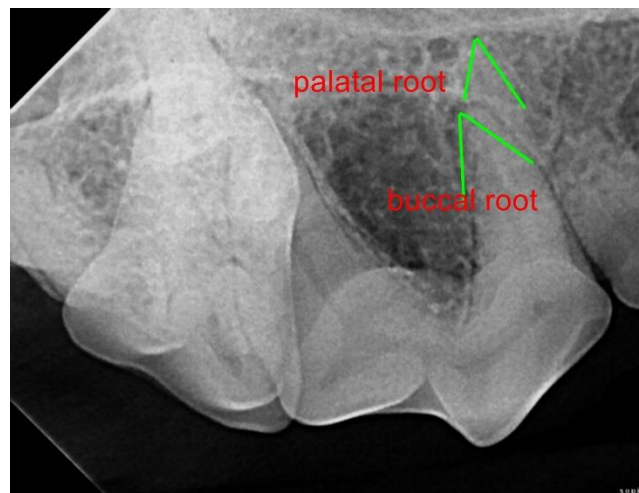
Tube head is at a 60-degree angle, or 2 o'clock, similar to the premolars.

Tube head is not pointing directly at the tooth. Coming from front to back.

Use the space between the eye and crown as a guide.

This will allow you to see the buccal and palatal roots separately, instead of being superimposed on each other.

Example:



Molars



Sensor is on flat plane, pushed straight back as far as it will go.

Slightly angled towards inside of the mouth.

Caudal corner of sensor (towards the back of the mouth or cut corners) should stick out slightly.

Molars



Tube head is at a 60-degree angle, or 2 o'clock, similar to the premolars and carnassial.

Tube head is not pointed directly at molars. Coming back to front, using the eye as your guide. (Point above the eye)

This will allow you to not only see the distal root of carnassial but also the molars.

Example:



Sensor Placement (Mandible)

PATIENT IS IN DORSAL RECUMBENCY

Cord is always rostral, or coming out of the mouth

Cut corners of sensor are always caudal, or towards the back

Incisors



Sensor placement is same as upper incisors

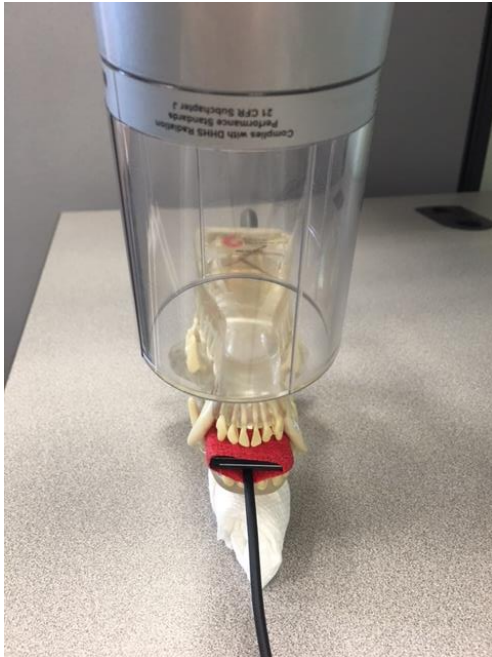
Sensor is flat, placed straight into the mouth. Crowns of the incisors are on the edge of sensor.

Sensor is not tilted or angled.

Plenty of sensor space to catch the “shadow” of those roots.

Incisors

PATIENT IS IN DORSAL RECUMBENCY



Tube head is at about a 45-degree angle or 1 o'clock.
Tube head is close to patient.
Aimed at roots of incisors, making sure the radiation hits sensor.
Same as maxillary incisor shot.

Example:



Canines



Sensor is placed flat, straight into mouth.

Much like the incisor shot, but pushed farther back to capture the apex or tip of root.

Edge of sensor is behind the crowns of incisors.

Sensor is not tilted or angled.

Canines



Tube head is at the same angle as the incisor shot previous to it.
Moved slightly back, to aim at the apex of the canine.
Cone should align with the sensor.

Example:



Premolars



Sensor is placed on a flat plane, pushed straight back.

Crowns of premolars are on edge of sensor.

Minimal sensor space outside of mouth.

May need two shots to get all four premolars

Premolars



Tube head is at a 60-degree angle, or about 2 o'clock. Slightly lower than the incisors and canine.

Shoot radiograph from the side.

Aim at the roots, not the crowns.

Depending on the size of the dog, this may take two shots.

Example:



Carnassial

Because of the dog's vaulted mandible, the sensor has more room to vary with placement on this shot

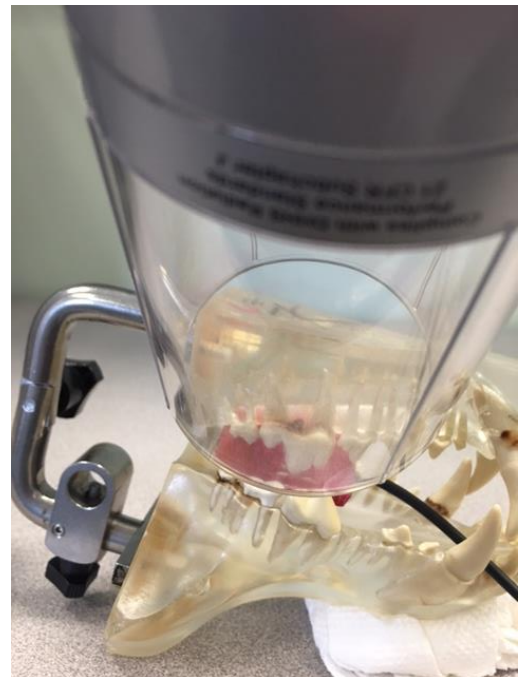


This is the only shot that your sensor is not going to be on a flat plane

Sensor should be slightly tilted in towards mandible.

Crown is still on the edge of the sensor.

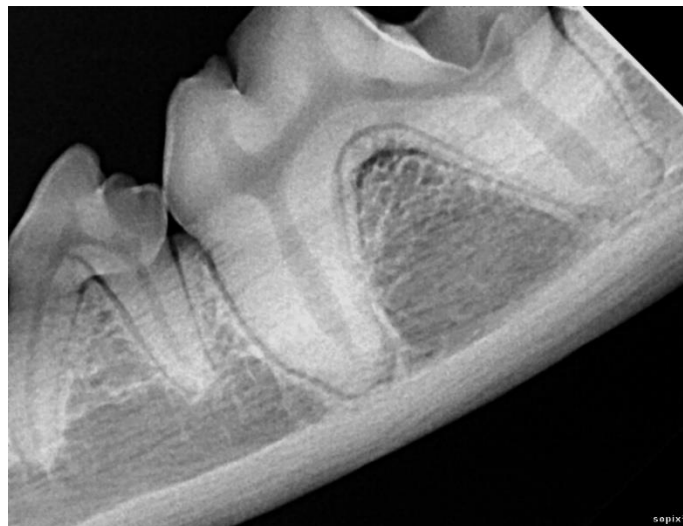
Carnassial



Tube head is almost parallel to sensor, although still slightly pointed downwards.

Aim at the roots of the carnassial, where sensor is tucked into that vaulted palate.

Example:



Molars



Sensor is back to being on a flat plane, pushed back into caudal part of mouth.

Angled slightly towards outside of the mouth.

The corner closest to cord slightly sticking out (opposite corner from mandibular molar shot).

Molars



Tube head is at a 60-degree angle, or 2 o'clock, similar to the premolars and carnassial.

Tube head is not pointed directly at molars. Coming back to front, towards the back of the jaw.

This will allow you to see the tiny back molar.

Example:

