

This document describes the guidelines for a CT scan that is taken for the purpose of ordering ProPlan CMF products, such as anatomical models and surgical guides. Using this scanning protocol as a guideline will result in a more accurate, stereolithographic model and/or surgical guide.

### Scanning parameters

Use the following scan parameters or the closest approximation possible. Scans must be less than four (4) months old.

Matrix	512 x 512
Slice thickness	Max. 1.0 mm
Feed per rotation	Max. 1.0 mm
Reconstructed slice increment	Max. 1.0 mm
Reconstruction algorithm	Bone or high resolution
Gantry tilt	0°
Export	DICOM
Format	Uncompressed Standard DICOM

### Preparation of the patient

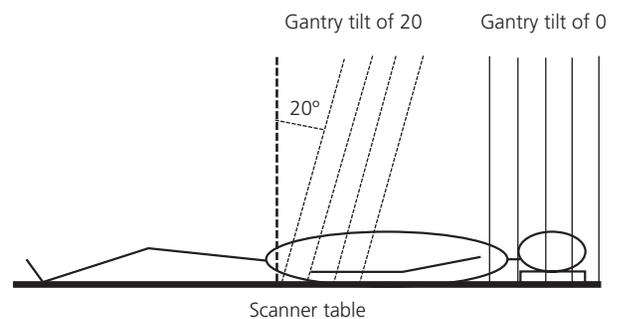
Remove any non-fixed metal dentures or prosthesis, in addition to any jewelry that might interfere with the region to be scanned. Non-metal dentures may be worn during the scan.

Place the patient supine on the scanner table and move the patient into the gantry, head first.

Make the patient comfortable and instruct him not to move during the procedure. Normal breathing is acceptable, but any other movement, such as tilting and turning the head can cause motion artifacts that compromise the reformatted images, requiring the patient to be rescanned.

### Aligning the patient

It is advised not to use a gantry tilt. If the only option is to use a gantry tilt, please indicate the direction of angulation when the data is sent: *////* or *\\ \\*. It is very important to know whether a patient has been scanned with a gantry tilt (an angle other than 0°) or not. The software has been adapted to support data scanned with gantry tilt, however, interpolations and 3D representation will have an inferior quality due to the gantry tilt.



Align the patient in a way that prevents as many artifacts as possible in the resulting images.

Use the head holder with sponges to stabilize the position. If you cannot orient the head properly in the head holder, use the tabletop. In either case, strap the head securely to prohibit motion.

Stabilize the relationship of the jaws during the scan. The patient is preferably scanned with the jaws slightly open (if available, you can use a bite block). This will reduce the risk of artifacts from the opposing jaw disturbing the images of the jaw of interest. Also, this will make it possible to isolate the occlusal plane from the images.

You can take a lateral alignment image (called a Localizer, Scoutview, Topogram, Scanogram, Pilot or Surview, depending on the CT manufacturer) to verify the correct patient positioning.

# CT Scanning Protocol. For Synthes ProPlan CMF Models and Surgical Guides.

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## Scanning instructions

Set the table height with the area to be scanned centered in the scan field.

All slices must have the same field of view, the same reconstruction center, and the same table height.

Overlapping the axial slices can improve the quality of the reformatted images.

Scan all slices of the study in the same direction.

Scan with the same slice spacing; the slice spacing must be less than or equal to the slice thickness. The slice thickness should preferably not be larger than 1 mm.

## Reconstruction of the images

Use a proper image reconstruction algorithm to get sharp reformatted images, for locating internal structures such as the alveolar nerve. Use the sharpest reconstruction algorithm available, usually described as a bone or high-resolution algorithm.

Reconstruct the images with a 512 x 512 matrix.

Only the axial images are required.

Save the images in uncompressed standard DICOM format onto a CD or DVD.



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