

NobelGuide™ Quick-Guide for Radiologists

I. How does computer-based NobelGuide™ work?



1. Examination of the patient – treatment evaluation.



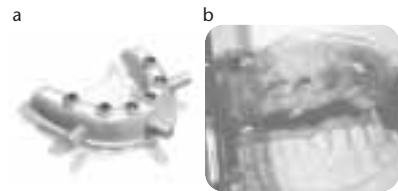
2. Radiographic Guide and Radiographic Index (bite index) manufactured by clinician for use during CT scanning.



3. CT Scanning (Double scan technique). Send DICOM files to referral.



4. Plan the case in the Procera® Software.



5a. Surgical Template manufactured.
5b. Stone model, prosthetic reconstruction and Surgical Index fabricated.



6. Perform surgery



7. Final or temporary prosthesis delivered day of surgery.



CT scanning is required in the protocol for computer based NobelGuide™.

II. Computer based NobelGuide™ workflow

For the radiologist, the actual working steps 2 and 3 are described in this Quick Guide. For more information on the remaining steps, please see the new, updated NobelGuide™ Concept Manual GB #16161 and CD #17506.

Step 2. Radiographic Guide and Radiographic Index (bite index) manufactured by clinician for use during CT scanning.

Radiographic Guide

- Has an ideal set-up of teeth in terms of occlusion, position, occlusion height and lip support. An

optimal Radiographic Guide is required for a successful treatment.

- Could be an existing denture or newly produced duplicate of the denture. For partial and single cases, inspection windows have been made on the occlusal plane of the neighboring teeth.

II. Computer based NobelGuide™ workflow – continued

- Made of a non radio-opaque material 2.5–3 mm thick, i.e. acrylic or material with similar density.
- 6–8 Guttaperka markers have been placed into the Radiographic Guide.
- The Radiographic Guide should be scanned, along with the Radiographic Index during the first scanning of patient. During the second scanning, it should be scanned by itself, without the index.

Radiographic Index

- This Radiographic Index ensures the optimal position of the Radiographic Guide during CT scanning when the patient keeps the jaw closed.
- Made from a hard/stiff silicone or polyether based material, no radio-opaque material e.g composites etc.

Step 3. CT scanning (Double scan technique) Send DICOM files to referral.

- It is very important to perform the double-scan in order to get clear and precise data of the patient's alveolar bone and of the Radiographic Guide.
- Two CT scans must be performed:
 - (1) Patient with Radiographic Guide and Radiographic Index
 - (2) Radiographic Guide without index
- Since the Hounsfield Units generated for the Radiographic Guide resemble soft tissue, the double-scan is used to solve the problem of extracting the Radiographic Guide from the single scan
- The gutta-percha markers are vital as reference points to perform an accurate fusion of both scans.

Checklist for Radiologist

1. Prior to scanning

- Check the Generic CT scan protocol and its settings in regards to your CT scanner

- Fully understand the Protocol for CT scanning (Double scan technique) to be used for computer based NobelGuide™
- Radiographic Guide and Radiographic Index available
- 6-8 Gutta-Percha markers are present in Radiographic guide

2. Scanning

Related to the scanned area

- Use a scout image to define the field of interest
 - a. For upper jaw use axial slices parallel to occlusal plane/hard palate:
 - reaching from lower dentition up to cover lower nasal concha
 - For planning for Zygoma implants cover also sinus maxillary
 - b. For lower jaw use axial slices parallel to occlusal plane/mandibular crest :
 - reaching from upper dentition including entire corpus mandible

CT scan parameters settings and data transfer

- Do not exceed the recommended slice distance/reconstruction interval of 0.5 mm
- Do not compress the CT data transfer (uncompressed DICOM 3 format needed)

During first scanning – Scan 1 (Patient + Radiographic Guide + Radiographic Index)

- 1a. Check that the occlusion is correct. The Radiographic Index is in right position/occlusion when all teeth bite on the index (no space between the teeth).
- 1b. Instruct the patient to close the jaws, light and constant bite force,

and maintain so during the whole CT scan procedure

- Check that the patient's lips are relaxed (and ideally closed) and they are breathing through the nose (avoid any mis-position of the denture/Radiographic Guide due to breathing through mouth with the index)
- Instruct the patient not to move or swallow during the short period of the scanning process

During second scanning – Scan 2 (only Radiographic Guide)

- Scan the Radiographic Guide without Radiographic Index in the same plane as during first scanning

After CT Scanning, Send to Clinician:

- Uncompressed DICOM 3 format data
- Radiographic Guide (if applicable) and Radiographic Index

For complete instructions for using NobelGuide™, please refer to the new, updated NobelGuide™ Concept Manual GB #16161 and CD #17506

Double scan technique

Scan 1

Scan 2

