Loocid Smart Guide

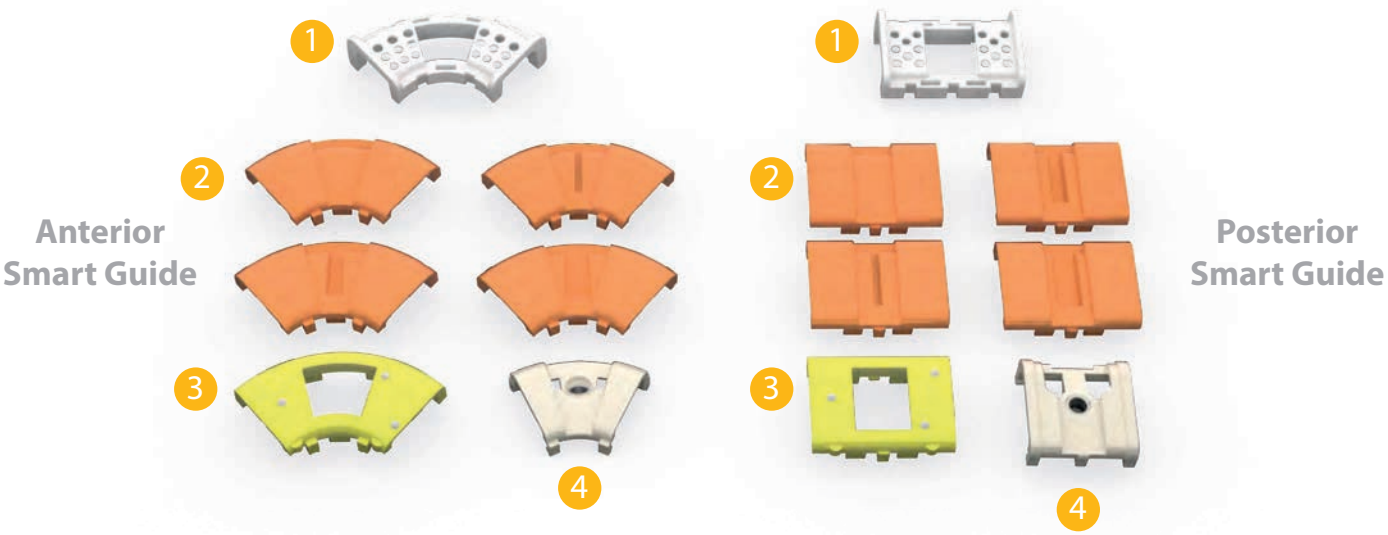
Instructions for Use

Overview

The Loocid Smart Guide is an economical implant surgical guide system for single tooth, quadrant or full-arch cases. This system eliminates the need for optical scans or dual CBCT scans – requiring only a simple impressions and CBCT scans to be performed prior to treatment planning.

System Components

1. Base Frame
2. Impression Caps
3. Scan Cap
4. 3D-printed Patient-specific segment
5. Metal Drill Guide Cylinder and Accessories

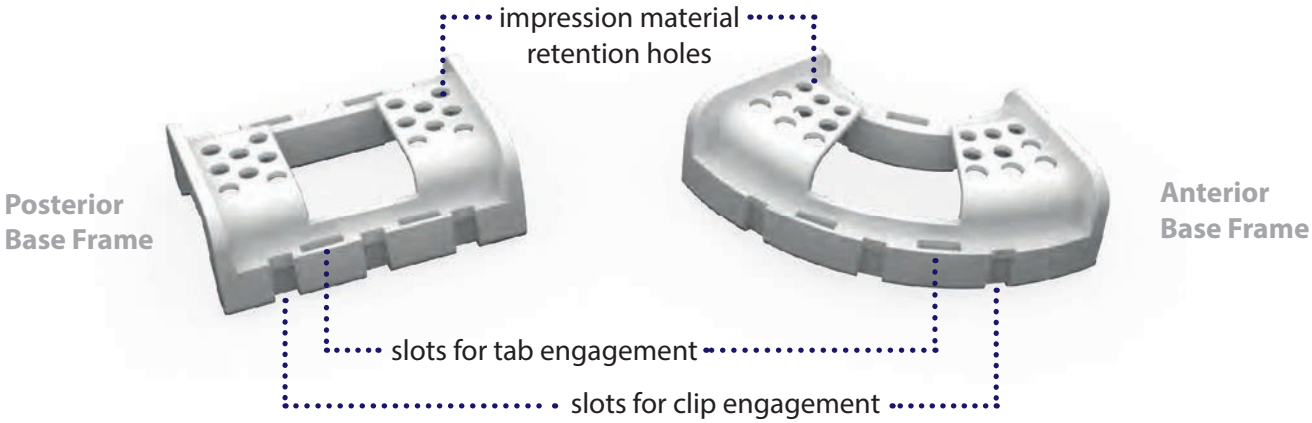


Procedure in brief (detailed procedure on pages 4 – 6):

1. An impression is taken with the Smart Guide's impression cap in place.
2. The Scan Cap is placed on the Smart Guide frame and a CBCT scan is performed on the patient. Radio-opaque markers within the scan cap pinpoint the location of the Smart Guide in reference to the osteotomy site.
3. The treatment planner inputs the DICOM files i to specialized software which is used to design the Patient-specific segment.
4. The Patient-specific segment is 3D-printed and a Metal Drill Guide Cylinder is inserted into it.
5. The Patient-specific segment is snapped onto the Smart Guide frame, which the clinician then re-inserts into the patient's mouth. The impression taken in step #1 ensures that the Smart Guide will be placed in the precise position necessary to accurately guide the surgery.
6. Surgery for implant placement is performed.

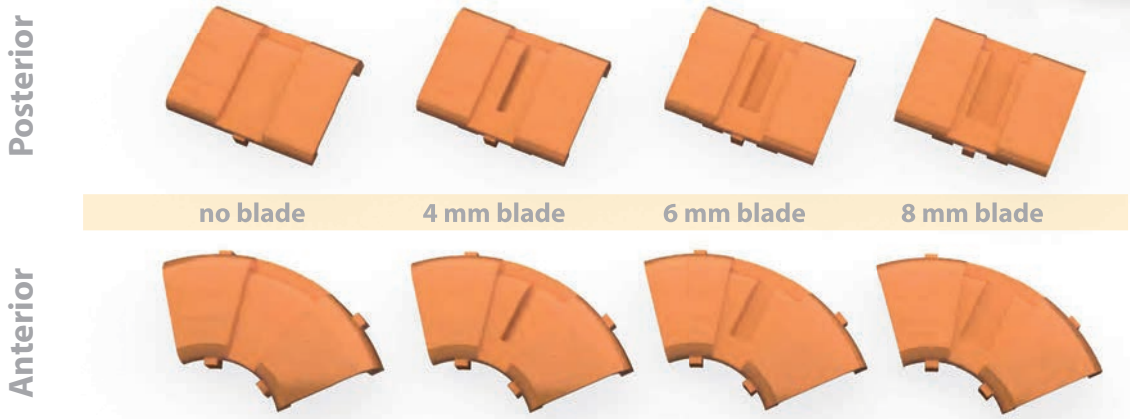
1. Base Frames

The Base Frames are the sturdy and rigid core of the system onto which the Impression Caps, Scan Caps, and Patient-specific segment are attached. The impression material is securely held by the Base Frame throughout the procedure, so that a precise and accurate surgery can be performed. Base Frames for single-implant placement come in two different designs: Posterior and Anterior.



2. Impression Caps

The Impression Caps come with differently-sized blades so that the one that will best help center and secure the Smart Guide over the osteotomy site can be chosen. See the Instructions for Use on page 4 for more details.



3. Scan Caps

The Scan Caps pinpoint the location of the Smart Guide in reference to the osteotomy site using radio-opaque markers that are visible in CBCT scans. The Scan Caps also serve as guides to cut away excess impression material in preparation for surgery.

4. 3D-printed Patient-specific Segment

This customized segment holds the Metal Drill Guide Cylinder in the precise location and orientation for an accurate, successful surgery. Its design is generated using special Loocid treatment planning software and the exported STL-file can be 3D printed. To ensure proper fit and function, the clips and the form of this segment are already predesigned in the Loocid software. Only the position and angulation of the implant axis needs to be determined.

Posterior

Anterior

5. Metal Drill Guide Cylinder and Accessories Kit

Metal Drill Guide Cylinders are available for all implant systems and sizes.

Kit includes:

1. Metal Drill Guide Cylinder
2. Reducers sized to fit corresponding pilot drills.
3. Tissue Punch sized to match the metal cylinder.
4. Measuring tools to confirm osteotomy depth.

1. Choose the best-fitting Impression Cap to center the Base Frame correctly

a. Remove all components from packaging.

b. Try the bladed Impression Caps in the gap over the missing tooth to determine which one has the blade that fits the gap best. The blade will help to ensure the guide is centered over the osteotomy site when the impression is taken. For an extraction case, use the cap without a blade.

testing blade fit

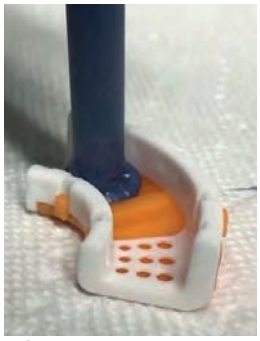
blade-less Impression Cap for extraction cases

c. Snap the chosen Impression Cap onto the Base Frame to prepare the guide for impression-taking. The other Impression Caps will not be used.

Impression Cap snapped onto Base Frame

2. Take Impression

a. Apply tray adhesive and fill the underside of the Smart Guide with medium-body impression material. Be sure to fill the retention holes evenly.



filling retention holes

filling rest of frame

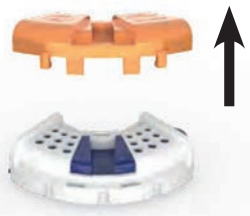
b. Use the Impression Cap blade to help center the guide over the osteotomy site as you insert it in the patient's mouth. The Smart Guide should be held level with the teeth as the impression cures. *Be especially careful not to tilt it towards the lingual side*.

resulting impression

3. CBCT scan

a. Remove the Smart Guide from the patient's mouth.

b. Remove the Impression Cap and replace it with the Scan Cap. Dispose of all the Impression Caps.



remove Impression Cap

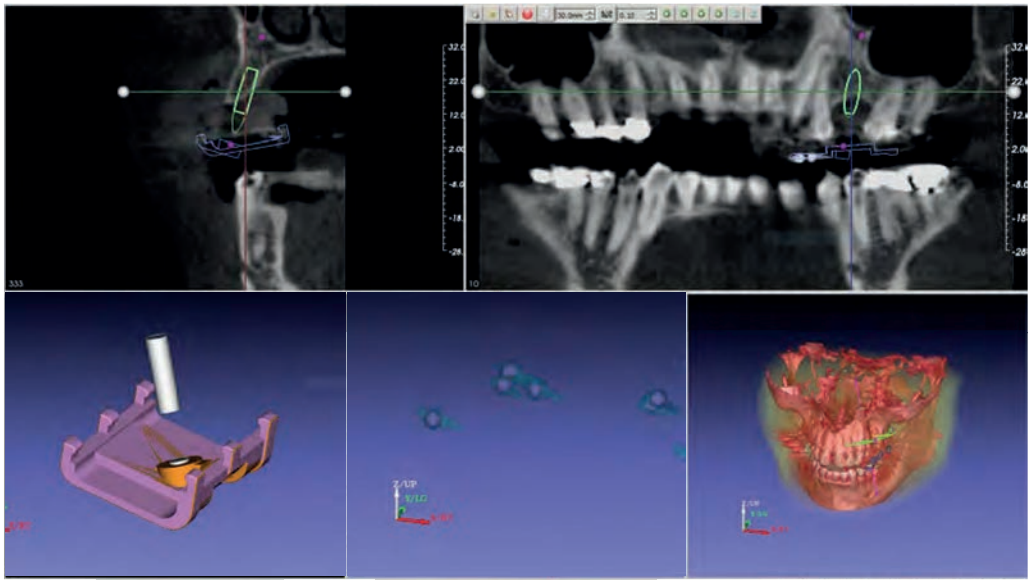
install Scan Cap

c. Place the Smart Guide back into the patient's mouth, and take a CBCT scan.

d. Send the DICOM files to your treatment planning software.

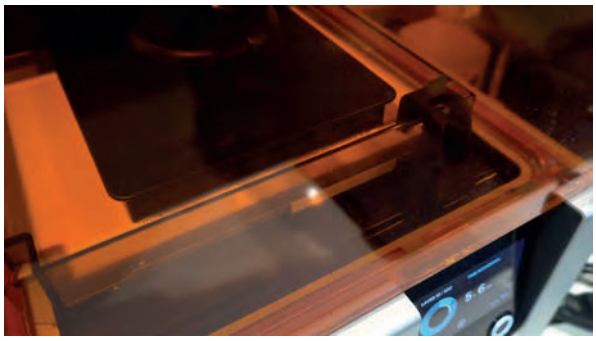
4. Treatment planning

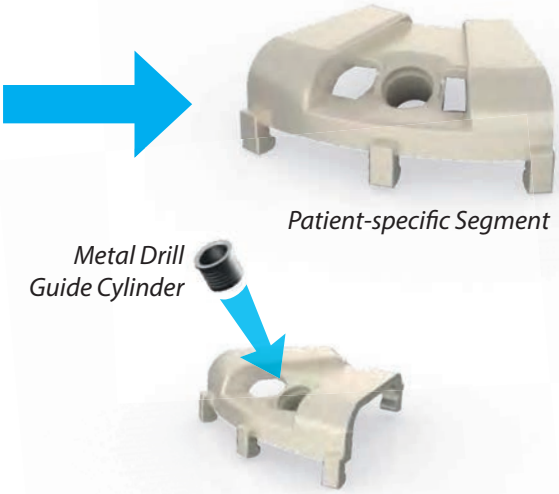
The Loocid treatment planning software automatically aligns a virtual Smart Guide with the CBCT by locating the radio-opaque markers built into the Scan Cap. This allows the Patient-specific segment to be designed in accordance with the treatment plan. After the implant axis and position is determined and the Patient-specific Loocid Segment is automatically designed by the Loocid software, the STL file can be exported for 3D printing.



5. 3D Print the Patient-specific Segment

a. 3D print the Patient-specific segment with a suitable material on a printer that is accurate to +/- 50 microns or better.





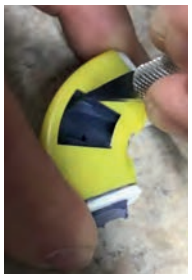
Patient-specific Segment

Metal Drill Guide Cylinder

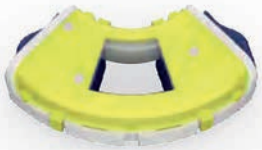
b. Insert the Metal Drill Guide Cylinder for the drill designated by the treatment plan (this may be done by the treatment planning or 3D printing service).

6. Surgery

a. With the Scan Cap still installed on the Smart Guide, cut out impression material with a sharp knife or scalpel from the center of the frame to provide a clear path for the drill during surgery.



cut around the edges of the Scan Cap's window



clear path for the drill

b. Remove the Scan Cap and replace it with the Patient-specific segment

remove Scan Cap

install Patient-specific Segment

c. Place the Smart Guide back into the patient's mouth, and ensure that it is fully seated.

d. Proceed with implant surgery according to the treatment plan with Loocid Smart Guide in place to guide the drills.

ready for surgery