

3D Endo[™] Software

User Manual

1 Demo case Petient view Screenabults Connected 1. DUADNOSIS & PATHOLOGY - 2. EXTRACT TOOTH - 3. INVESTIGATE CANAL SYSTEM • - 4. 3D TOOTH ANATOMY - 5. TREATMENT PLAN - Parager Korge - Temparatory regime Messure Message control gamma - Message - Parager Korge - Message control gamma - Message control gamma - Message control gamma - • Patalal 20 mm - • Message	X Close B Seve								Help & training	Preferences
1. DIAGNOSIS & PATHOLOGY 2. EXTRACT TOOTH 3. INVESTIGATE CANAL SYSTEM 4. 3D TOOTH ANATOMY 5. TREATMENT PLAN Painse Clefty Mesure Access Cerly degit: Mesure Conde Working Lengh Masser Paintal 2 mm Poliper Next3 Omage Mesboccal 20 mm Mesboccal 22 mm Poliper Next3 Omage	1 Demo case							Patient view	Screenshots (1)	Create report
2. EXTRACT TOOTH 3. INVESTIGATE CANAL SYSTEM 4. 3D TOOTH ANATOMY 5. TEATMENT PLAN Panyoyu withing hangha, access ceivity & mester file.	1. DIAGNOSIS & PATHOLOGY -						-A			
3. INVESTIGATE CANAL SYSTEM • 4. 3D TOOTH ANATOMY • 5. TREATMENT FLAN Panyou working length, access carly degr: Access carly degr: Mession Canda Working Length Paster File. Themperatory Outlobuccit 20 mm Poliper Next 30 Onstope Messboccit 20 mm Messboccit 20 mm Messboccit 20 mm Messboccit Outlobuccit 20 mm Messboccit 20 mm Poliper Next 30 Omage Messboccit Databoccit 20 mm Philoper Next 30 Omage Messboccit 22 mm Poliper Next 30 Omage Messboccit 22 mm Poliper Next 30 Omage Outboccit 20 mm Databoccit 20 mm Databoccit 20 mm	2. EXTRACT TOOTH ·					- Al				-
4. 30 TOOTH ANATOMY 5. TREATMENT PLAN Plun your working length, access certity & master file. Access Certity Access Certity Access Certity Messure Consis Working Length Politobuccial 20 mm Politobuccial 20 mm Politobuccial 20 mm Politoper Next X3 Obstopecial 20 mm Politoper Next X2 Obstopecial Distribuccial 20 mm Politoper Next X2 Obstopecial 20 from Politoper Next X2 Obstopecial	3. INVESTIGATE CANAL SYSTEM -					(EUR				++
5. TREATMENT PLAN Plan your working langth, access certity & master file. Ansee Certy Access certity agent: Access certity agent: Measure Centals Working Length Master File O Hatal 32 mm O Hatal 32 mm O Instaboccali 30 mm Melsboccali 22 mm Melsboccali 23 mm	4, ЗД ТООТН АНАТОМУ -					L'SP45	11			0
Canala Working Langth Master File Palatal Databaccal Databaccal	5. TREATMENT PLAN Plan your working length, access cavity & master file. Access carly depth Access carly depth (Messure)			Transparency;						
			Canals	Working Length		Master File				
O Detabuccat 20 mm Teaching Perfuger Next 33 Change Image: Mesiobuccat 1 22.0 mm Perfuger Next 33 Change Perfuger Next 33 Change Image: Mesiobuccat 2 22 mm Image: Perfuger Next 32 Change Image: Perfuger Next 33 Change Image: Perfuger Next 32 Change Image: Perfuger Next 32 Change Image: Perfuger Next 32 Change: Perfuger Next 33 Image: Perfuger Next 33		0	Pelatal	22 mm		ProTaper Next X3	Change			
		۰	Distobuccal	20 mm	(Buggest)	ProTaper Next X3	Change			
		0	Mesiobuccal 1	22.5 mm	(hopped	ProTaper Next X3	Change			
Distobuccal 2 20.5 mm K-File 006 Change		۰	Mesiobuccal 2	22 mm	Support	ProTaper Next X2	Change			
		•	Distobuccal 2	20.5 mm		K-File Q06	Change			



Table of contents

1	Introduction	3
2	Indication for use	3
3	Contraindications	4
4	Warnings	4
5	Precautions	4
6	Adverse Reactions	6
7	Step by Step Instructions	7
7.1	3D Endo™ Software Overview	7
7.2	Key Screens	8
7.2.1	Home Page	
7.2.2	Scan List	
7.2.3	Wizard	
7.3	Tips	12
7.3.1	Tips on Demo Case	
7.3.2	Tips by "Show Tips"	
8	Technical Characteristics	14
9	Troubleshooting	14
10	Identification of Symbols	
10.1	Normative Symbols	15



1 Introduction

Congratulations on your purchase of the **3D Endo™ Software**.

The User Manual is always kept up to date by Dentsply Sirona to bring it in line with the latest developments. The User Manual is available in different languages. You will find the latest version on www.dentsplysirona.com/3DEndo-na.

Dentsply Sirona reserves the right to change the information and data contained in this User Manual.

If you wish to have a printed copy, we will be happy to send it to you (free of charge within 7 calendar days). To order, simply send your request to 3dendo-na@dentsplysirona.com.

Dentsply Sirona has attempted to compile a User Manual that is helpful and error free. Nevertheless errors may have been overlooked and improvements could be beneficial. We would appreciate your feedback in this area. If any possible improvements are noted, please contact Dentsply Sirona (3dendo-na@dentsplysirona.com).

In this DFU, "clinician" might be replaced by "dentist" depending of the countries.

2 Indication for use

3D Endo™ Software is intended to aid in the visualization, diagnosis and planning of endodontic treatment and re-treatment cases utilizing DICOM images.



3 Contraindications

Read the following contraindications before use:

• Do not use **3D Endo™ Software** for implants or any other dental procedure outside endodontics.

4 Warnings

There are no known serious adverse reactions or potential safety hazards.

5 Precautions

- The application will automatically install the latest version. Regularly connect your computer to the internet when running the 3D Endo[™] Software. Refer to chapter 8 Technical Characteristics for minimal requirements;
- The quality of the images in the 3D Endo[™] Software depends on the quality of the original CBCT scans. To obtain optimal results, please use the scan parameters specified in the CBCT scan prescription form;
- If you are unaware of your Open GL version, please download the free trial version of 3D Endo[™] Software at www.dentsplysirona.com/3DEndo-na to verify the compatibility of your system.

User access will be controlled by the Microsoft Windows operating system for:

- · Configuring user accounts;
- Setting password policies;
- Forcing password changes;
- Setting appropriate user login timeout based on no activity.



When implementing the software in a network setting, the following are recommended:

- Using firewall as appropriate;
- Implementing anti-virus detection software as appropriate;
- Implementing process to identify security compromises;
- Contacting the Customer Service department in the event of any security compromise.

Read the following warnings before use:

- This product should be used by trained clinicians with experience reading and understanding CBCT scan data. It is the clinician's ultimate obligation to exercise his/her professional judgment in any decision to follow or not follow the treatment planning made using the medical device (software). Dentsply Sirona cannot be held liable for misinterpretation of 2D and 3D visualized CBCT data, wrong definition of the canal mid-line, of any parameters that require user inputs, errors in the original DICOM data or lack of experience in reading CBCT;
- Clinical judgment needs to be applied by the end user of the device;
- The 3D Endo[™] Software allows clinicians to visualize endo files within the root canal. The file position and bending is defined from the canal mid-line identified by the user without any clinical interpretation of the specific tooth anatomy. The mechanical and geometrical properties of the root canal and the file are not taken into account by the 3D Endo[™] Software. Therefore the 3D Endo[™] Software cannot predict file separation nor automatically indicate risky canal curvatures;
- Follow the online scan protocol (www.dentsplysirona.com/3DEndona) and the software prescription form defined in the **3D Endo**[™] Software to maximize the quality of the CBCT data;



- Reports linked to cases in the application are subject to the requirements of the applicable country and local legislation on data privacy. Clinicians are responsible for the privacy of their cases and compliance with local regulations. Dentsply Sirona recommends the use of the anonymizing case functionality in order to protect personal data;
- **3D Endo™ Software** does not replace your Dental Practice Management Software;
- Do not attempt to modify the 3D Endo[™] Software or application. Dentsply Sirona cannot be held liable if unauthorized modifications have been made to the 3D Endo[™] Software application;
- It is highly recommended to regularly schedule backups of your data files.

6 Adverse Reactions

There are no known adverse reactions.



7 Step by Step Instructions

Refer to chapter **5 Precautions** to verify if special care needs to be exercised before starting.

Due to the large file sizes and significant processing capability required to manage CBCT scans and applications, minimum hardware requirements are defined. Refer to chapter **8 Technical** Characteristics.

7.1 3D Endo[™] Software Overview

The **3D Endo™ Software** uses a CBCT scan in the DICOM standard format as input. By following the 5-steps in the software, you will achieve an endodontically oriented visualization of the 3D anatomy and a detailed plan for the root canal treatment. Step by step instructions as well as Tips are embedded in the **3D Endo™ Software**.



Fig. 1



7.2 Key Screens

7.2.1 Home Page

The homepage allows you to:

- Import a CBCT scan (resolution and slice thickness should be less than 200 micrometers);
- Practice with a demo case;
- Open an existing case;
- · Access help and training on how to use the software;
- Change your preferences;
- Learn how to optimize your CBCT scan for use with 3D Endo™ Software.



Fig. 2



The Demo Case is a CBCT scan already loaded in the software. You can access it at any time to practice or experiment with **3D Endo™ Software**.

7.2.2 Scan List

The Scan list shows you:

- The list of scans found in the selected folder or device;
- Case information;
- Quality of the scan.



CBCT image information

Fig. 3



The **3D Endo™ Software** shows you the quality of the scan in relation to Resolution & Slice Thickness of the DICOM data.

Minimal CBCT requirements:

- · Resolution & Slice thickness should be less than 200 micrometers;
- Resolution & Slice thickness should be equal to avoid misinterpretation of accuracy;
- Prescribe or use a bite plate for clear information about the occlusal surface, otherwise accurate measurements and visualization of the images might be compromised.

Scanning Tips:

- Take a small field of view to reduce radiation dose;
- Reduce scatter by:
 - Taking a small field of view;
 - Replace radio-opaque fillings with radio-translucent material, as much as possible;
 - Try to exclude neighboring & opposing teeth containing metal.

For more information on how to optimize the CBCT scan for use with **3D Endo™ Software**, look into the CBCT scan prescription form on the homepage or in the 'Help section'.

🚱 Show tips 📓 Help 🔅 Preferences Fia. 4

For more general information on CBCT, go to the knowledge of the Dentsply Sirona website (www.dentsplysirona.com/3DEndo-na).



7.2.3 Wizard

The Wizard allows you to:

- Diagnose your case;
- Isolate the tooth of interest;
- Investigate the canal system;
- Understand the 3D Canal anatomy;
- Create a Treatment plan.

			To go to th	e next step
		Change	e your prefe	erences –
Display Tips within the	Find a	II the help	you need -	
application	Launch the tutoria	s at any tir	me –	
X Close B Save			O Show tips	Help 🏘 Preferences
į Dentsply Sirona Demo Case				Continue >
 DIAGNOSIS & PATHOLOGY Diagnose the case & review the pathology 	Aviat	Switch View • 4-up OPG	SD	• •• A
2. 3D TOOTH ANATOMY Isolate the tooth of interest				
3. CANAL SYSTEM Identity all the canale, mark the canal orifices & apical foremen			and the second sec	
4. 3D CANAL ANATOMY Indicate the canal midline & review curvature in 3D				
5. TREATMENT PLAN Plan your access davity, working Length & Master Ille	No annotations.	今 音 Enter	comments	

Fig. 5



A detailed guide on the different steps can be found embedded in the software as a set of Tips.

You can find these help Tips in two different ways:

- By launching the Demo Case on the Homepage (see 7.3.1 Tips on Demo Case);
- By enabling the "Show Tips" functionality on any page in the Wizard (see **7.3.2 Tips by "Show Tips"**).

You can also find more information at www.dentsplysirona.com/ 3DEndo-na, or by clicking on the 'Learn more' buttons available in the **3D Endo™ Software**.

7.3 Tips

Throughout the Wizard, Tips will be displayed to explain which actions to take and how to proceed.



Fig. 6



7.3.1 Tips on Demo Case

The first Tip will be shown immediately upon launching the Demo Case from the homepage:

- · You can go to the next Tip by pressing 'Next';
- To go back to previous Tips, press 'Previous';
- You can hide Tips at any time, by pressing 'Hide Tips';
- To reactivate Tips, press 'Show Tips'. You will start with the first Tip of the step you are on at the moment.

O Show tips	📕 Help	- Preferences
	Fig.	7

7.3.2 Tips by "Show Tips"

At any time, you can display the Tips by pressing 'Show Tips'.

The **3D EndoTM Software** will show the first Tip related to the step you are on at that moment.

- You can go to the next Tip by pressing 'Next';
- To go back to previous Tips, press 'Previous';
- You can hide Tips at any time, by pressing 'Hide Tips'. The training will automatically stop at the moment you switch steps or view;
- To continue the training, press 'Show Tips'.
 You will start with the first Tip of the step you are on at the moment.





8 Technical Characteristics

Specifications	Description			
Operating system**	Windows 7, 8.1 or 10; 64 bit			
Processor	3rd Generation Intel [®] Core™ Processor or higher			
RAM	4 GB or more			
Free disk space	20 GB or more			
Graphical card requirements	On-board Intel [®] HD Graphics 2500 or higher			
Screen resolution	1024 x 768 or better			
Open GL requirements	Version 3.2 or higher			
Measuring accuracy	Length accuracy*: ± 0.5 mm Diameter accuracy*: ± 0.5 mm Angle accuracy*: $\pm 0.5^{\circ}$ Working length accuracy*: ± 0.5 mm (* For DICOM images with pixel size of 0.125 mm)			
Manufacturer	Dentsply Tulsa Dental Specialties Johnson City, TN 37604 USA Phone: 1-800-662-1202 Fax: 1-800-597-2779 3dendo-na@dentsplysirona.com www.dentsplysirona.com			
Product Name	3D Endo™ Software			

** OSX, Linux and other operating environments are not supported at this time.

9 Troubleshooting

Please contact your local technical support team.



10 Identification of Symbols

10.1 Normative Symbols

Symbol	Identification
	Electronic instruction for use
	Manufacturer
REF	Catalogue number

www.dentsplysirona.com/3DEndo-na







Dentsply Tulsa Dental Specialties Johnson City, TN 37604 USA

Phone: 1-800-662-1202 Fax: 1-800-597-2779 3dendo-na@dentsplysirona.com www.dentsplysirona.com