Basic information on Straumann® guided pilot surgery.

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Straumann is the industrial partner of the ITI (International Team for Implantology) in the areas of research, development, and education.

About this guide.

The Basic Information on Straumann® Guided Surgery for pilot only drilling for the Straumann® Dental Implant System provides dental professionals and related specialists with the essential steps for surgical treatment planning, and procedures for pilot guided surgery.

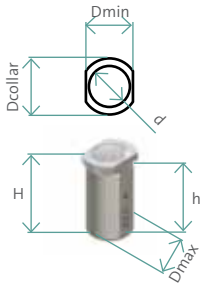
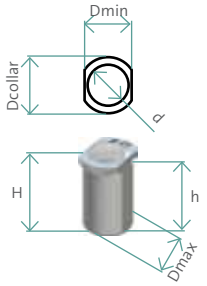
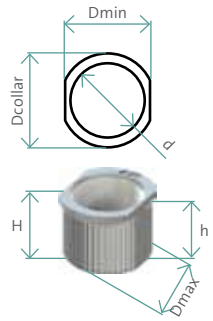
The manual is divided into the following main parts:

- Preoperative planning and guided surgery for Straumann Dental Implant System
- Planning and clinical solutions
- Surgical procedures
- Product specifications
- Additional information

The following information is not sufficient to allow immediate use of the Straumann Dental Implant System. Knowledge of dental implantology and instruction in the handling of the Straumann Dental Implant System provided by an operator with the relevant experience and by the brochure for conventional procedures “Straumann Dental Implant System: Basic Information on the Surgical Procedures” (NAMLIT 1017) are always necessary. For detailed information on products supplied by third parties, please contact these companies directly.

Please note that not all products are available in all markets.

Please contact your local Straumann representative for more details.

Article	Art. No.		Sleeve inner diameter	Sleeve outer diameter	Sleeve height	Use of drill handle
Ø 2.2 mm T sleeve	046.712V4		d = 2.2 mm	Dmin = 2.6 mm Dcollar = 3.8 mm Dmax = 3.2 mm	H = 6 mm h = 5.5 mm	no (Direct guidance of guided drills Ø 2.2 mm)
Ø 2.8 mm T-sleeve	034.055V4		d = 2.8 mm	Dmin = 3.2 mm Dcollar = 4.4 mm Dmax = 3.8 mm	H = 6 mm h = 5.5 mm	no (Direct guidance of milling cutters and guided drills Ø 2.8 mm)
Ø 5 mm T-sleeve	034.053V4		d = 5 mm	Dmin = 5.7 mm Dcollar = 7.0 mm Dmax = 6.3 mm	H = 5 mm h = 4.5 mm	yes

Surgical template fabrication

The surgical template must allow for proper irrigation of the surgical site. For this purpose, windows can be included in the surgical template.

For a correct fit of the cylinder of the handles in the sleeve remove additional material around the sleeve.

⚠ Caution

- Ensure the sleeves are firmly fixed into the surgical template.
- Radial and axial load on the sleeves must be avoided to help ensure proper retention of the sleeves in the surgical template and reduce abrasion of the rotating instruments in the sleeve.
- Prior to starting the surgical procedures, evaluate the fit and stability of the surgical template on the model and in the patient's mouth as well as size and localization of the openings for irrigation after receiving it from the manufacturer. Verify if the position and orientation of the sleeves in the surgical template correspond with the preoperative plan. Check product documentation (if available) from the surgical template manufacturer.

Surgical template pre-processing

For disinfection/sterilization of the surgical template before surgery use an appropriate liquid chemical disinfectant (e.g. betadine®) or a sterilizing agent that follows the instructions from the template manufacturer. Do not damage the material of the surgical template.

Precautions

- Guided instruments must only be used together with the corresponding sleeves fixed in templates and handles.
- Inspect the instruments for operational reliability prior to each surgery and replace if necessary.
- Cutting instruments must not rotate during insertion into and removal from sleeves or handles (see adjacent figure).
- Avoid lateral pressure on instruments which may lead to damage of the instruments, the cylinder of the handle and the sleeve. Hold the drill handle while drilling.
- During and after implant bed preparation, the patient's mouth must be thoroughly rinsed and aspirated.
- Pilot and twist drills have an apical overlength (up to 0.4 mm) at the drill tip compared to the insertion depth of the implant.
- Use intermittent drilling technique.
- Use handles only in combination with guided instruments, as indicated on the package labeling.
- Do not bend handles.
- Ensure ample cooling of cutting instruments with sterile saline solution (NaCl). This applies for instruments used with handles as well.
- Guided instruments must not be used in combination with drill sleeves with collar (049.810V4), thermoplastic drill templates (040.526 and 040.527) or drill stops (040.460, 040.454S-040.457S).

No rotation

Only start rotation when inserted

SURGICAL PROCEDURES

Use of the mucosa punch

As an option, the mucosa punch can be used **through the Ø 5.0 mm sleeves** before using the milling cutter. The following table lists the available mucosa punches with its specifications.

Art. No.	Article		Max rpm.
034.010	Mucosa punch, Ø 3.4 mm, guided		15
034.011	Mucosa punch, Ø 4.0 mm, guided		15
034.012	Mucosa punch, Ø 4.7 mm, guided		15

The three depth marks indicate the distance from bone level to the upper border of the respective sleeve (H2, H4, H6).

Step 1 – Prepare the alveolar ridge

The correct milling cutter as indicated in the surgical protocol provides a flat bone surface and a sufficiently wide area of bone. In case of hard cortical bone conditions, milling cutters with increasing diameters can be used. The following table lists the milling cutter to be selected for the respective implant bed.

Art. No.	Article	Max rpm.		Endosteal implant diameter (mm)		
				Ø 3.3	Ø 4.1	Ø 4.8
034.215	Milling Cutter, Ø 2.8 mm, guided	600				
034.415	Milling Cutter, Ø 3.5 mm, guided	500				
034.615	Milling Cutter, Ø 4.2 mm, guided	400				

Note

Milling cutters are used in conjunction with Ø 2.8 mm and Ø 5.0 mm sleeves and have no physical stop.

Straumann Guided Pilot Drilling Ø 2.2 mm sleeves

With Ø 2.2 mm sleeves for guided pilot drilling, the surgical template is only used for guiding the pilot drill. No drill handles are required. After opening the gingiva, start the basic implant bed preparation by preparing the alveolar ridge with conventional procedures. (Step 1 below). Next, place the surgical template and prepare the implant bed using the pilot drill ø2.2 mm (Step 2 below).

Step 1 – Prepare the alveolar ridge
Carefully reduce and smooth a narrow tapering ridge with a large round bur. This will provide a flat bone surface and a sufficiently wide area of bone.

Step 2 – Drill implant bed to Ø 2.2 mm
Continue the implant bed preparation with the Ø 2.2 mm pilot drill for Guided Surgery.

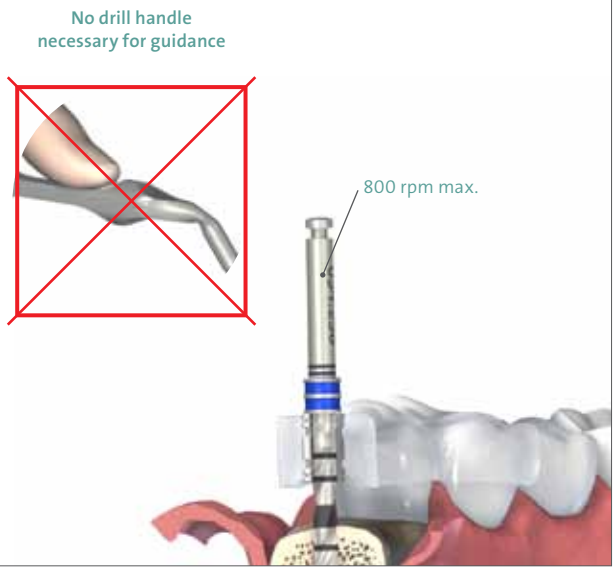
Notes for Ø 2.2 mm sleeves
- No drill handle required.
- The height of the ø2.2 mm sleeve is 6 mm.

The conventional procedure without surgical template is described in the brochures “Dental Implant System: Basic Information on the Surgical Procedures” (NAMLIT 1017) and “Straumann Basic information on the surgical procedures for the Straumann® Bone Level Tapered Implant (NAMLIT 1043).

Notes for Ø 2.2 mm sleeves
- Always drill until the collar of the drill hits the sleeve in order to reach the required osteotomy depth.
- Final implant bed preparation cannot be executed with guided instruments. Make sure to have the instruments for conventional procedures ready for use.

1

2



STRAUMANN GUIDED PILOT SURGERY Ø 2.8 MM SLEEVE

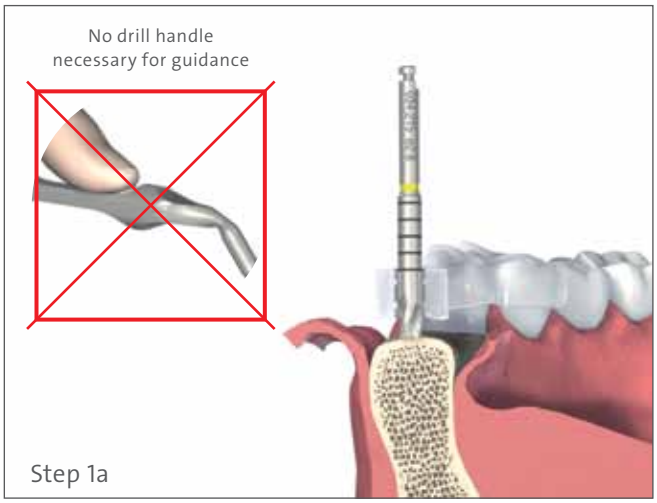
Basic implant bed preparation for pilot guided surgery
With Ø 2.8 mm sleeves for narrow interdental spaces, no drill handles are required. After opening the gingiva and placing the surgical template, begin basic implant bed preparation by preparing the alveolar ridge using the Milling Cutter Ø 2.8 mm (Step 1 below). Then, the implant bed is directly prepared with the Twist Drill PRO Ø 2.8 mm (Step 2 below). No Ø 2.2 mm pilot drilling is required.

Ø 2.8 mm T-sleeve

Notes for Ø 2.8 mm sleeves
- No drill handle required.
- The height of the Ø 2.8 mm sleeve is 6.0 mm.

Step 1 – Prepare the alveolar ridge
The Milling Cutter Ø 2.8 mm provides a flat bone surface and a sufficiently wide area of bone.

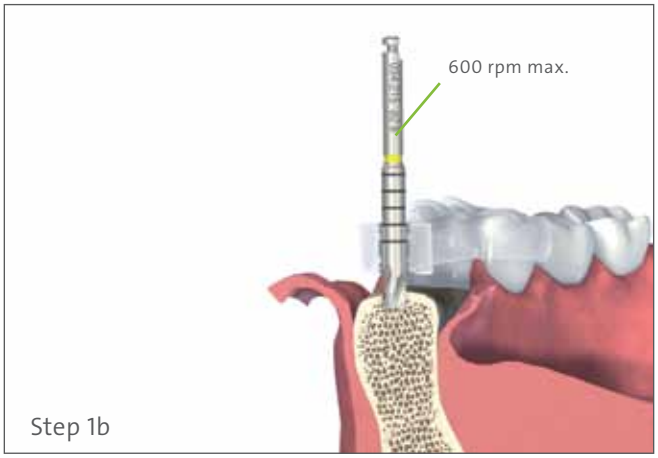
Step 1a – Identify bone level
Insert the Ø 2.8 mm Milling Cutter into the sleeve in the surgical template until it hits bone level. Use the laser marks on the milling cutter as depth reference (2.0 mm intervals).



Step 1a

Step 1b – Prepare the alveolar ridge
Use the laser marks on the milling cutter (2 mm intervals) as depth reference, since milling cutters have no physical stop.

Note
Milling cutters must only be used for flattening the alveolar ridge.



Step 1b

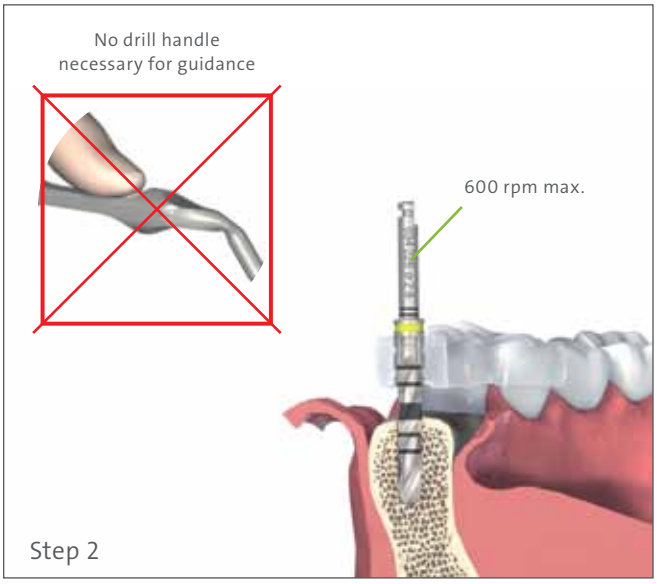
Step 2 – Drill implant bed to Ø 2.8 mm
Continue the implant bed preparation with the Ø 2.8 mm Twist Drill PRO for Guided Surgery.

The guided basic implant bed preparation ends here. Continue with the guided basic implant bed preparation of the remaining implant sites. Optionally use template fixation pins when preparing multiple sites.

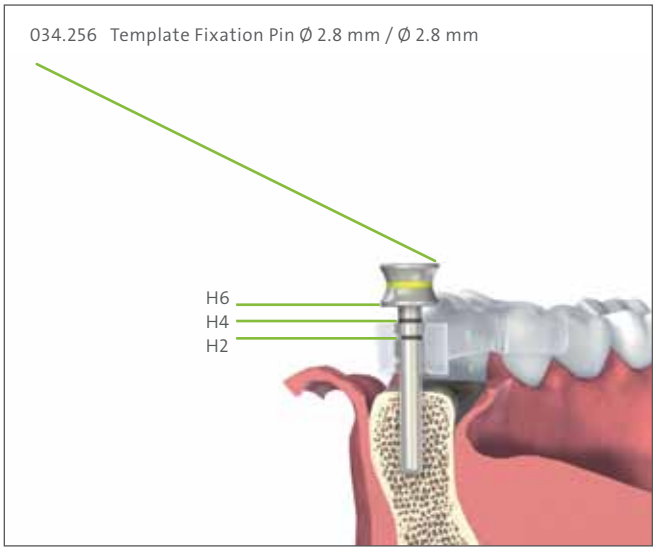
After pilot drilling, remove the surgical template and follow the conventional procedure for widening the implant bed and implant placement.

Notes for Ø 2.8 mm sleeves

- Always drill until the collar of the drill hits the sleeve in order to reach the required osteotomy depth.
- Final implant bed preparation cannot be executed with guided instruments, when Ø 2.8 mm sleeves are used. Make sure to have the instruments for conventional procedures ready for use.



Note
The conventional procedure without surgical template is described in the brochure “Straumann® Dental Implant System: Basic Information on the Surgical Procedures” (NAMLIT 1017).



Template fixation pins
Additional stabilization of the surgical template can be achieved by anchoring the surgical template with template fixation pins. Secure the pins against aspiration.

PRODUCT SPECIFICATIONS

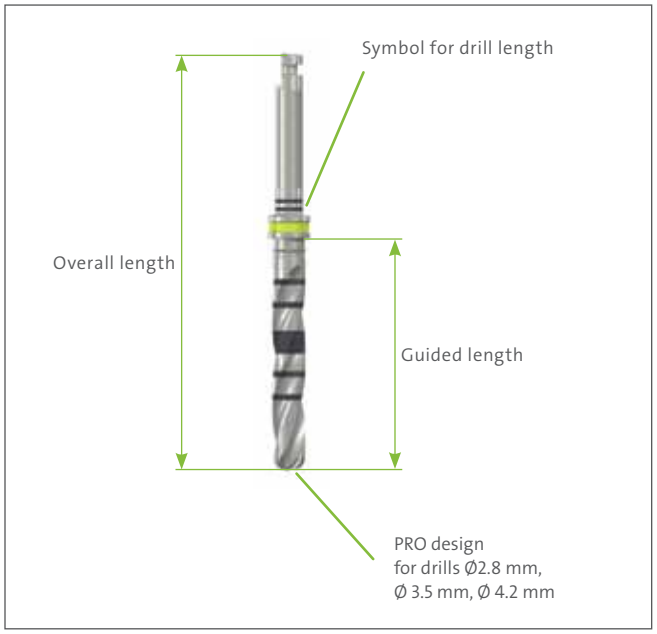
Sleeve-position implant-length matrix for Ø 2.2 mm and Ø 2.8 mm sleeves in the surgical template
While using Ø 2.2 mm or Ø 2.8 mm sleeves, no drill handle is required.

Implant length		6.0 mm	8.0 mm	10.0 mm	12.0 mm	14.0 mm	16.0 mm
Sleeve position	H2 2.0 mm		— short drill no drill handle		= medium drill no drill handle		≡ long drill no drill handle
	H4 4.0 mm	— short drill no drill handle		= medium drill no drill handle		≡ long drill no drill handle	
	H6 6.0 mm		— short drill no drill handle		≡ long drill no drill handle		

Example: The implant bed is to be prepared for an 8.0 mm implant with a sleeve fixed to the surgical template positioned at 2.0 mm above bone level (H2). Accordingly, the short drill (—) must be used in order to achieve the required implant bed depth.

Straumann® guided drill design
Straumann® guided instruments have depth marks in 2.0 mm intervals that correspond to the available implant lengths. Compared to the Straumann® conventional instruments, Straumann® guided drills are color-coded according to the instrument diameter and denoted according to the drill overall length on the shaft part (see figures below).

Drill name	Guided length	Overall length	Symbol for drill length
Short	16.0 mm	32.0 mm	—
Medium	20.0 mm	36.0 mm	=
Long	24.0 mm	40.0 mm	≡



⚠ Caution
Guided instruments must not be used without the indicated sleeves fixed to the surgical template in order to ensure guidance.

Color-coding and labeling of Straumann® cutting instruments for guided pilot surgery

Color-coding for guided pilot instruments

Color sequence		Instrument diameter	Endosteal implant diameter
●	blue	Ø 2.2 mm	pilot drill
●	yellow	Ø 2.8 mm	Ø 3.3 mm

Overview instruments for guided basic implant bed preparation BL/TL

Art. No.	Article	Name	Symbol	Overall length	Guides length	Max rpm.	
034.123	Pilot Drill Ø 2.2 mm	Short	—	32.0 mm	16.0 mm	800	
034.126	Pilot Drill Ø 2.2 mm	Medium	=	36.0 mm	20.0 mm	800	
034.129	Pilot Drill Ø 2.2 mm	Long	≡	40.0 mm	24.0 mm	800	
034.215	Milling Cutter, Ø 2.8 mm					600	
034.223	Twist Drill PRO, Ø 2.8 mm	Short	—	32.0 mm	16.0 mm	600	
034.226	Twist Drill PRO, Ø 2.8 mm	Medium	=	36.0 mm	20.0 mm	600	
034.229	Twist Drill PRO, Ø 2.8 mm	Long	≡	40.0 mm	24.0 mm	600	

Overview instruments for guided basic implant bed preparation BLT

Art. No.	Article	Name	Symbol	Overall length	Guides length	Max rpm.	
034.123	BLT Pilot Drill Ø 2.2 mm	Short	—	33.4 mm	16.0 mm	800	
034.126	BLT Pilot Drill Ø 2.2 mm	Medium	=	37.4 mm	20.0 mm	800	
034.129	BLT Pilot Drill Ø 2.2 mm	Long	≡	41.4 mm	24.0 mm	800	
034.215	Milling Cutter, Ø 2.8 mm					600	
034.223	BLT Drill, Ø 2.8 mm	Short	—	33.4 mm	16.0 mm	600	
034.226	BLT Drill, Ø 2.8 mm	Medium	=	37.4 mm	20.0 mm	600	
034.229	BLT Drill, Ø 2.8 mm	Long	≡	41.4 mm	24.0 mm	600	

ADDITIONAL INFORMATION

Additional information on surgical instruments

Instruments must be inspected for completeness and safe function. An adequate stock of implants and spare sterile instruments should always be available. The instruments must be disassembled for sterilization. Well maintained instruments help prevent development of infections that could endanger patients as well as the practice team.

To help ensure patient safety, all instruments and products used must be sterile and secured against aspiration in the patient's mouth. To prevent contamination of the sterile instruments, they should be removed from the surgical cassette and put into the handpiece or ratchet with sterile forceps. The forceps (Art. No. 046.110) was developed and shaped specially to allow round instruments to be gripped securely.

Care and maintenance of instruments

Most Straumann® components are not sterile when delivered. Use only solvents designed for stainless steel. Follow the solvent directions for use. Do not use any disinfectants or cleaning agents with high chlorine content or containing oxalic acid. Do not apply temperatures above 134 °C for machine cleaning or sterilization.

Guidelines for sterilizing the guided instruments utilizing the Straumann® Guided Surgery Cassette

Fractionated vacuum method: At least 20 min. at 121°C/250 °F or at least 3 min. (18 min. for prion inactivation) at 132 °C/270 °F or 134 °C/273 °F.

Gravitation method: At least 5min. at 132 °C/270 °F or 134 °C/273 °F.

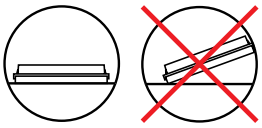
Note

*No dry heat sterilization! Instruments that are not thoroughly dried may corrode.

Before sterilization, the cassette is packed (e.g. sealed in foil or wrapped in towels) in order to maintain sterilization of product.

Precaution

- Do not use chemical sterilization.
- Do not use dry heat sterilization.



In order to avoid damaging the surgical cassette during autoclaving, it must be placed correctly in the autoclave (see figure).

Note

All steps related to the maintenance of Straumann® surgical instruments are part of a dental practice hygiene plan (see also "Care and Maintenance of Surgical and Prosthetic Instruments" (USLIT 119) and "Straumann® Dental Implant System: Basic Information on the Surgical Procedures" (NAMLIT 1017)).

Related documentation

Note

Our detailed documentation will help you in carefully planning and performing your implant-based restorations:

- “Straumann® Tissue Level Prosthetic System” (NAMLIT 1081)
- “Straumann® Solid Abutment Prosthetic System: Cement-retained Crowns and Bridges with the Solid Abutment System” (NAMLIT 1011)
- “Straumann® Bone Level Implant System” (NAMLIT 1080)

Instrument care and maintenance

Well-maintained instruments are a basic requirement for successful treatment. You will find detailed information in the brochure “Care and Maintenance of Surgical and Prosthetic Instruments“ (NAMLIT 1055).

The Straumann Guarantee®

As a Swiss company, we attach the greatest importance to manufacturing our products to the highest quality. We are firmly convinced of the scientific and clinical basis of our Straumann® Dental Implant System and draw on the fund of know-how from nearly 30 years of quality production. The Straumann Guarantee determines the limited lifetime warranty of all components of the Straumann® Dental Implant System. For more information, contact your local Straumann representative or call Straumann Customer Service at 800/210 1139.

References

The Straumann® Dental Implant System has been comprehensively clinically documented for over 25 years. You can find references to the current research literature on our website www.straumann.com or by contacting your local Straumann representative.

Courses and training

Continuing education promotes long-term success. Please ask your Straumann representative directly for information on the Straumann® Dental Implant System courses and training. Further information at www.straumann.us or www.straumann.ca.

Important guidelines

Please note
Practitioners must have appropriate knowledge and instruction in the handling of the Straumann® dental implants, Straumann CADCAM products, Straumann regenerative products or other Straumann products ("Straumann Products") for using the Straumann Products safely and properly in accordance with the instructions for use.

The Straumann Product must be used in accordance with the instructions for use provided by the manufacturer. It is the practitioner's responsibility to use the device in accordance with these instructions for use and to determine, if the device fits to the individual patient situation.

The Straumann Products are part of an overall concept and must be used only in conjunction with the corresponding original components and instruments distributed by Institut Straumann AG, its ultimate parent company and all affiliates or subsidiaries of such parent company ("Straumann"). Use of products made by third parties, which are not distributed by Straumann, will void any warranty or other obligation, express or implied, of Straumann.

Availability
Some of the Straumann Products listed in this document may not be available in all countries.

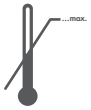
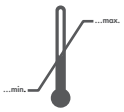
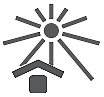
Caution
In addition to the caution notes in this document, our products must be secured against aspiration when used intraorally.

Validity
Upon publication of this document, all previous versions are superseded.

Documentation
For detailed instructions on the Straumann Products contact your Straumann representative.

Copyright and trademarks

Explanation of the symbols on labels and instruction leaflets

LOT	Batch code
REF	Catalogue number
STERILE R	Sterilized using irradiation
	Lower limit of temperature
	Upper limit of temperature
	Temperature limitation
Rx only	Caution: Federal law restricts this device to sale by or on the order of a dental professional.
	Do not re-use
	Non-sterile
	Caution, consult accompanying documents
	Use by
	Keep away from sunlight
CE	Straumann Products with the CE mark fulfill the requirements of the Medical Devices Directive 93/42 EEC
CE 0123	
	Consult instructions for use

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