



ORTHODONTIC MINI IMPLANTS

Clinical procedure for positioning



Orthodontics and Implantology

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LEONE ORTHODONTIC MINI IMPLANTS

Clinical procedure for positioning

SURGICAL PROCEDURE

- 1 – Mucosal incision:
 - a) flapping procedure
 - b) flapless procedure
- 2 – Osteotomy
- 3 – Mini implant insertion
- 4 – Connection of the mini implant to the orthodontic appliances
- 5 – Removal of the mini implant

WARNING

The surgical procedure for the use of the LEONE Orthodontic Mini Implants, that is described in the following pages, is intended for Professionals, Dental Surgeons and Dental Doctors. In case of lack of basic notions, we suggest to attend specific courses in order to reach a high level of knowledge and practice in the use of the orthodontic mini implant systems. The herewith described indications are not claimed to represent a substitution of the clinical knowledge of the licensed Professional. Patient's anamnesis, diagnosis, instrumental and laboratory exams and everything is necessary for a therapy approach must be decided by the Dental Surgeons or the Dental Doctor, who will effect the surgical intervention on the patient and who will be held the sole

responsible for such intervention.

The indications furnished in the following pages are to be intended for general use only and restricted to skilled and licensed Professionals who will be held the sole responsible for the construction of the prosthesis.

It is clear and accepted by the Dental Surgeon or the Dental Doctor, that the information contained in this brochure has informative purpose only and does not claim to be a substitution of the specific medical action, nor constitutes any legal relationship among Leone S.p.A., the Dental Surgeon, the Dental Doctor or even the patient.

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LEONE ORTHODONTIC MINI IMPLANTS

Leone mini implants are designed for temporary insertion and can be loaded with tractions (springs, wires, elastics, chains), to get dental movements with the biomechanical advantage of the maximum anchorage and in critical anchorage situations due to the lack of teeth (periodontal involved or edentulous patients).

Traction devices are tied through the passing hole present on the head of the mini implant or anchored at the groove featured by some models.

Following some possible applications are indicated:

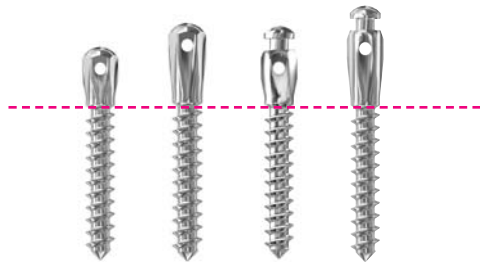
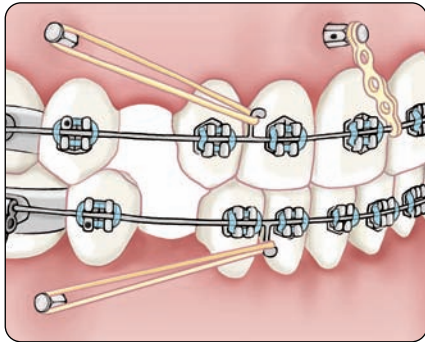
- Inter-arch extrusion
- Intra-arch intrusion on anterior teeth
- Intra-arch intrusion on posterior teeth
- Surgical disinclusions (cuspids, etc.)
- Orthodontic anchorage for distalization
- Orthodontic anchorage (i.e. after distalization)

Leone mini implants are manufactured in surgical grade stainless steel. They can be easily removed after use by simply unscrewing them in the opposite direction.

Leone mini implants are available:

- with **low head** (transmucosal height of 1.75 mm),
 - with **high head** (transmucosal height of 3 mm)
- and in two different versions: the first one with a **passing hole** on its head, while the second one presents a **groove** in addition to the hole.

The groove-added version has the prominent part similar to an orthodontic button to facilitate the application of chains, elastics or springs.



SURGICAL PROCEDURE

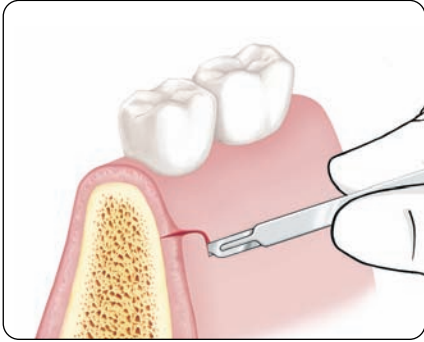
Warning: Leone orthodontic mini implants are provided as non-sterile and must be sterilized before use according to the instructions for use.

Warning: the body of the screwdriver for mini implants can be sterilized only by autoclave. The use of other sterilizing agents different than steam may damage the instrument.



1 – MUCOSAL INCISION: a) flapping procedure

1a.1 The flapping procedure is indicated when the patient presents with a solid mass of fluctuating soft tissue on the area where the osteotomy is supposed to be performed. In this case it is indicated to incise a small flap using known incision techniques.



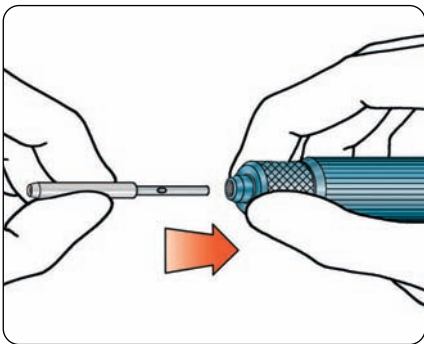
1a.2 An adequately large full-thickness flap is prepared.



1a.3 The soft tissues are detached.

b) flapless procedure

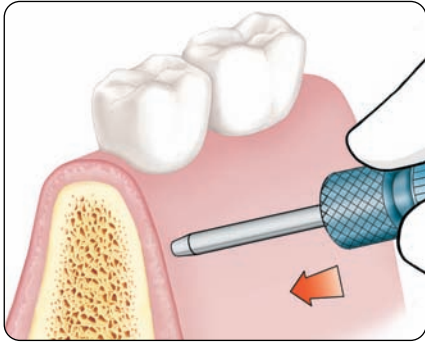
1b.1 The flapless procedure is indicated when the patient presents with attached gingiva to the area where the osteotomy is supposed to be performed.



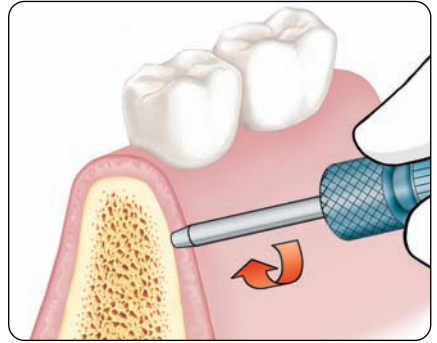
1b.2 To get the trans mucosal access to the bone crest the Leone manual tissue punch Cat. 080-1001-00 is to be used, once it is connected to the specific screwdriver Cat.080-1000-01 (about the connection refer to the procedure shown at paragraph 3.1).

The trans mucosal channel is supposed to have a larger diameter than the selected mini implant head, 2.2 mm wide in all the versions.

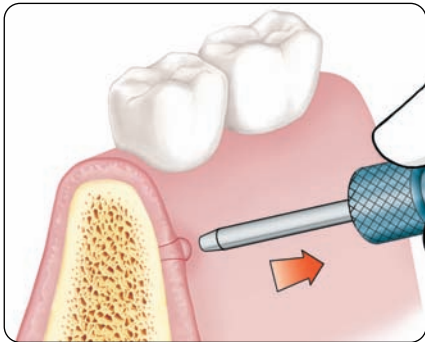




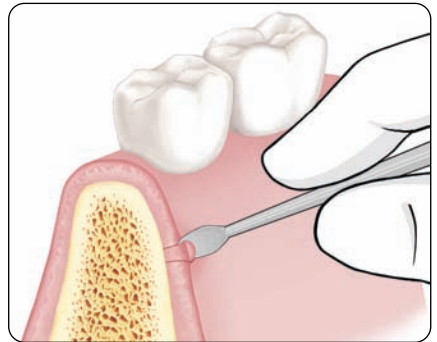
1b.3 Lean the mucotome to the soft tissues.



1b.4 Drill clockwise up to the bony tissue.

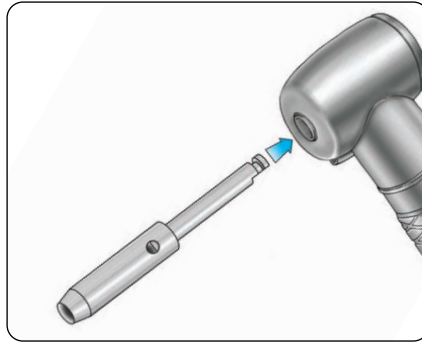


1b.5 Remove the mucotome.



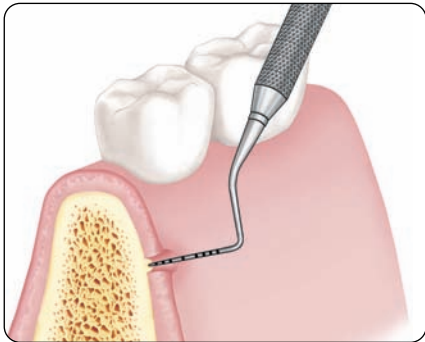
1b.6 Remove the gingiva dissection by using a small periosteal elevator.



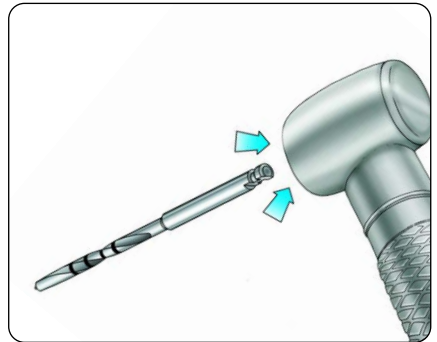


Alternatively the circular mucosa punch for contra-angle Cat. 080-1001-01 can be used. Use with a low-speed handpiece.

2 – OSTEOTOMY

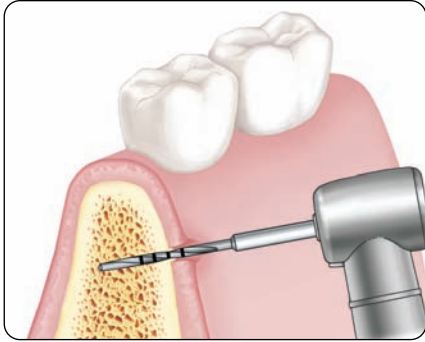


2.1 A periodontal probe is used to measure the height of the gingival tissue that will surround the mini implant.

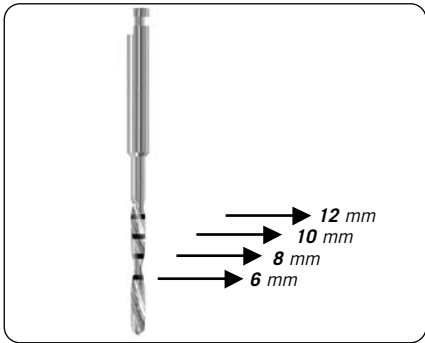


2.2 Considering the anatomical indications of the area and the measurements on the soft tissue, select the diameter and the length of the mini implant as well as the height of its transmucosal neck. Mount the drill suitable for the selected mini implant on the low-speed handpiece. Perform the osteotomy according to the chosen dimensions.





2.3 When a 1.5 mm diameter mini implant is selected and if the implant site shows low bone density conditions (bone type D3 and D4) use a 1.1 mm diameter drill, while if the bone is harder (bone type D1 and D2) a 1.3 mm diameter drill is to be used. When a 2 mm diameter mini implant is selected and if the implant site shows low bone density conditions (bone type D3 and D4) use a 1.5 mm diameter drill, while if the bone is harder (bone type D1 and D2) a 1.7 mm diameter drill is to be used.



On the drills there are reference lines corresponding to the following depths: 6 - 8 - 10 - 12 mm. The drill has to be inserted in the alveolar bone up to the notch that corresponds to the length of the selected mini implant, while it is kept perpendicular to the bone wall. The drilling speed has to be lower than 500 rpm and adequate irrigation is recommended. Replace burs when used more than 20 times or in case of worn out cutting edges.

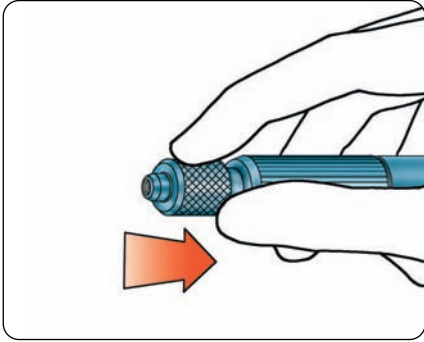
2.4 The drills have to be cleaned after usage as indicated in the enclosed directions.

2.5 The drills are replaced in the kit and they have to be sterilized before being used again.

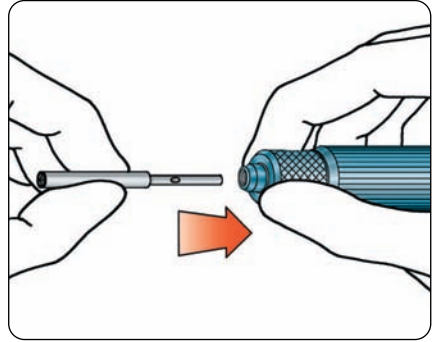


3 – MINI IMPLANT INSERTION

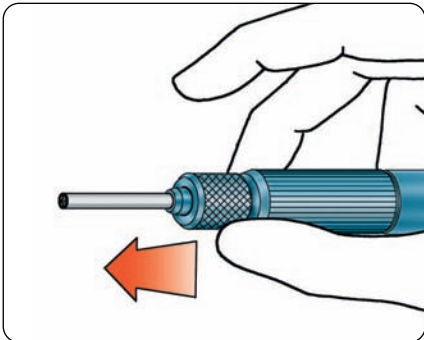
3.1 Insert the tip inside the screwdriver by following these steps.



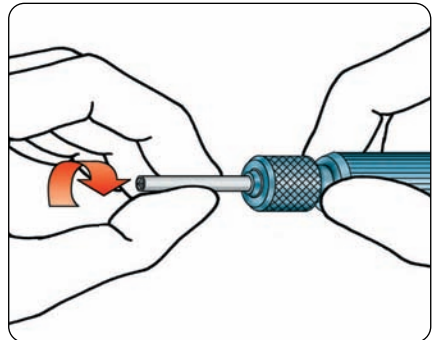
A - Grasp the screwdriver and pull the knurled sliding ring.



B - Insert the tip in the apposite site down to the rest.

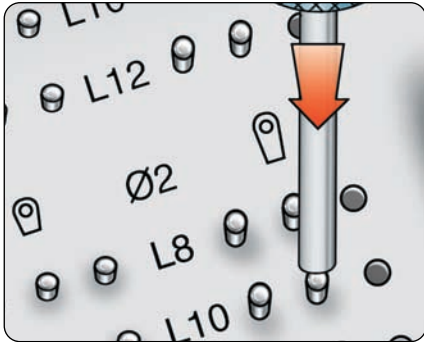


C - Release the sliding ring.



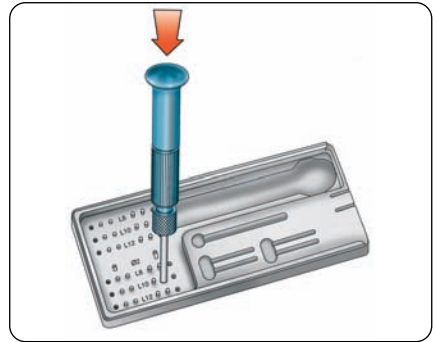
D - Rotate the inserted tip to find the full engagement. A click indicates that the engagement has been found. The sliding ring automatically goes back to the initial position with a firm grip on the tip.



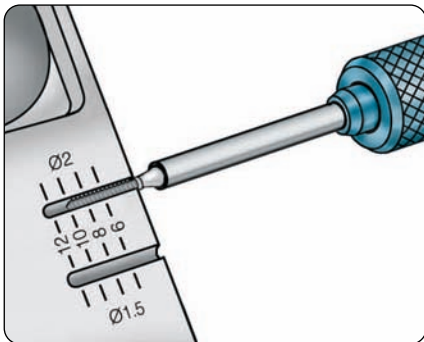


3.2 The tip of the screwdriver is positioned on the head of the selected mini implant.

Warning: the tip of the manual screwdriver has to be **exactly perpendicular** to the kit. This position guarantees the retention of the mini implant inside the screwdriver and allows the mini implant to be seized.



3.3 After having found the engagement, the screwdriver is pressed down to promote the retention of the mini implant inside the tip.



3.4 Verify the dimensions of the mini implant by using the purposely designed grooves on the kit container.



3.5 The mini implant is inserted in the implant site and it is screwed in a clockwise direction. The Leone mini implants are self-tapping. In order to screw the implant a pressure is exerted on the knob of the screwdriver with the palm of the hand and the instrument is rotated with the fingers.



3.6 As an alternative to the above procedure, the mini implant, by using the specific adapters, may be inserted as follows:

- by using a contra-angle handpiece (**fig. A**) with Leone adapter Cat. 080-1002-00
- by using a manual instrument with Leone adapter Cat.080-1003-00, with manual instruments for Leone implant system, such as:
 - screwdrivers Cat. 156-1001-00/01 (**fig .B**)
 - ratchet Cat. 156-1014-00 (**fig. C**)
 - angled key Cat. 156-1005-00 (**fig. D**)

In case of insertion by using a contra-angle handpiece, a speed of 20 rpm and a torque of 20 N-cm have to be set.

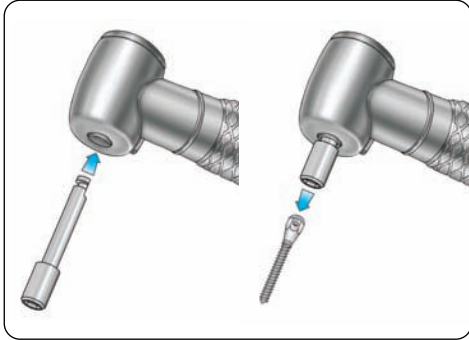


fig. A



fig. B

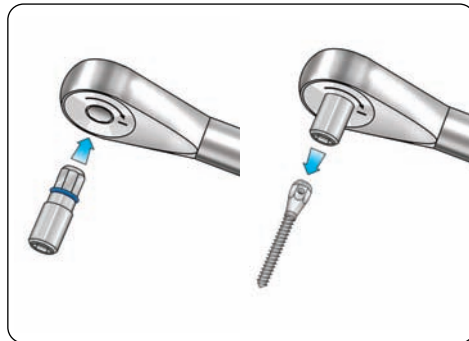


fig. C

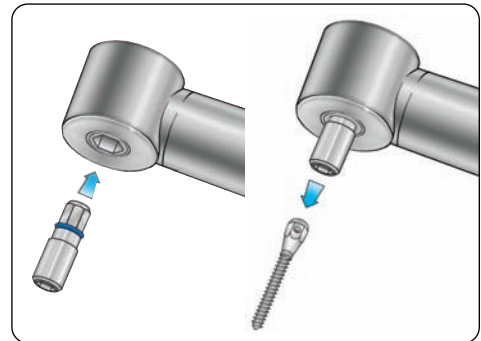
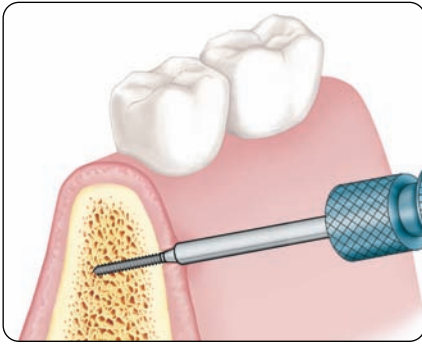
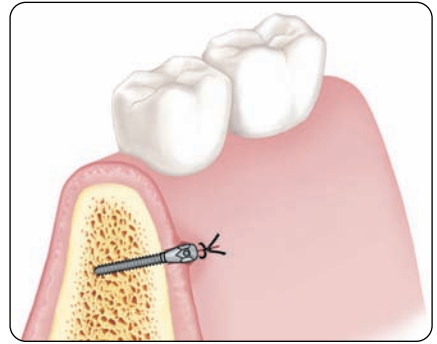


fig. D

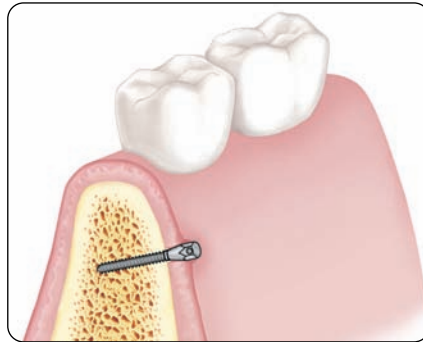




3.7 The mini implant is screwed until its head comes into contact with the cortical bone of the alveolar ridge.

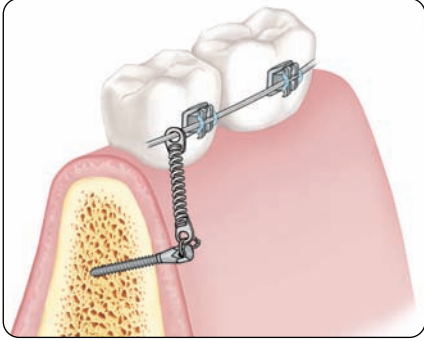


3.8a Should the **flapping procedure** be adopted, the soft tissues are sutured around the neck of the mini implant.



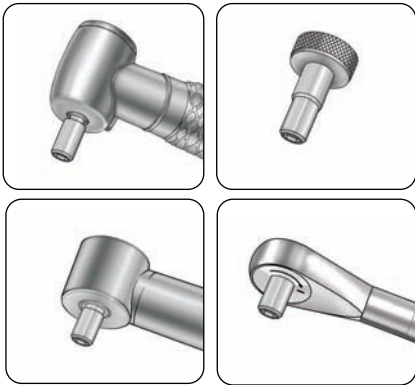
3.8b Should the **flapless procedure** be adopted, no suture is required after the insertion of the mini implant. Soft tissues perfectly adhere to the head of the mini implant thanks to the precision of the hole drilled with the mucotome.

4 – CONNECTION OF THE MINI IMPLANT TO THE ORTHODONTIC APPLIANCES



4.1 The mini implant can be loaded with chains, elastic wires or springs for the connection to the orthodontic appliance to induce the required tooth movements. The wire, the chain or the coil spring are connected to the mini implant by using the hole through the head or the groove of the mini implant. The application time of the orthodontic traction on the mini implant depends on the clinician's judgement; the mini implant can usually be loaded immediately after insertion or after healing of soft tissues.

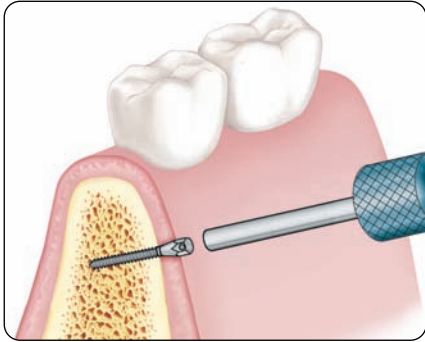
5 – REMOVAL OF THE MINI IMPLANT



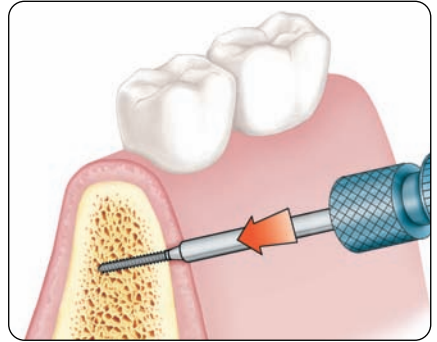
5.1 At the end of treatment, and never later than 6 months, the mini implants have to be removed.

To remove mini implants, the same instruments already employed for the insertion can be used by turning them counterclockwise.

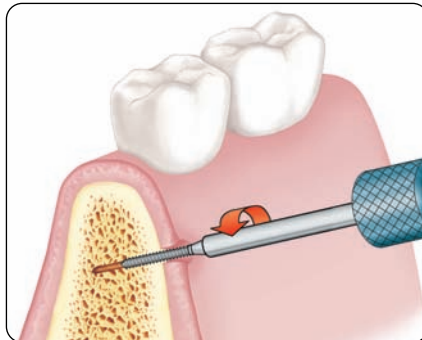




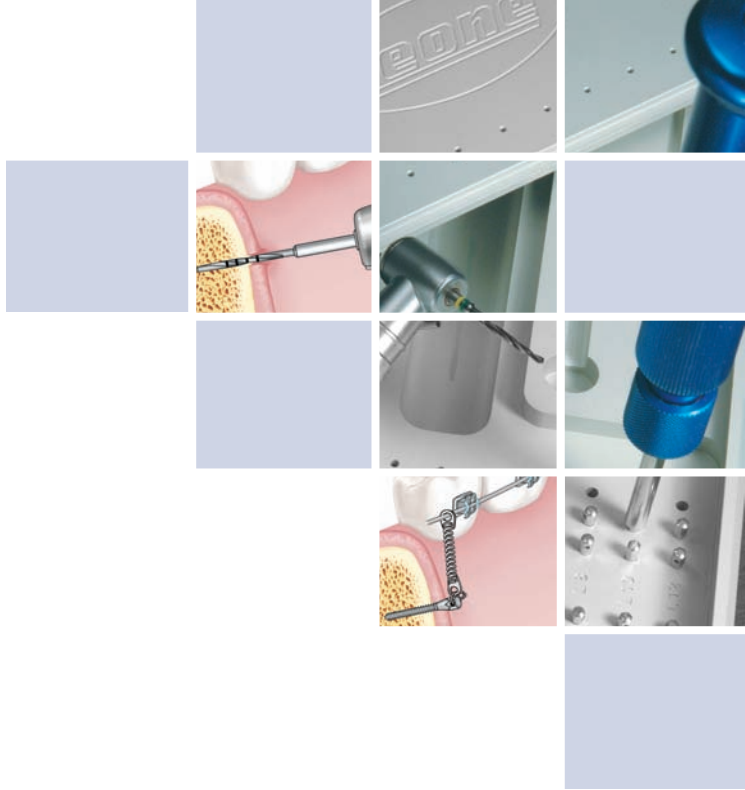
5.2 The tip of the screwdriver is positioned over the head of the mini implant to find the hexagonal engagement.



5.3 After having found the engagement, a pressure is applied on the screwdriver to facilitate the retention of the mini implant inside the tip.



5.4 The screwdriver is turned counterclockwise. In order to remove the mini implant, a pressure is exerted on the knob of the screwdriver with the palm of the hand and the instrument is rotated with the fingers.



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