

## PROSTHETIC characteristics



**screwless**

### LEONE CONNECTION

The implant-abutment connection system, thanks to the properties of the **Morse taper**, the **absence of the abutment screw** and the presence of an internal hexagon, guarantees:

- outstanding resistance to masticatory forces ( $\varnothing 3,3\text{mm}$  abutment fatigue strength: 240 N,  $\varnothing 4,1\text{mm}$  abutment fatigue strength: 392 N – tests performed according to the ISO 14801 international standard)
- a dramatic reduction of prosthetic complications due to the **absence of the abutment screw**
- extreme ease of abutment preparation, due to abutments without a screw access hole and made of titanium with a high degree of hardness
- precise transfer of implant position between the dental office and the laboratory.



### LEONE 360° CONNECTION

The Leone 360° connection is the only one worldwide which makes it possible to have indexed abutments with no limits of position, due to the freely positionable apical hexagon separated from the rest of the abutment. In this way it is always easy to achieve parallelism, without losing the important index (hexagon). This feature is particularly advantageous for abutments with anatomical shape and abutments for overdenture and screw-retained prosthesis, which are ready for use.



### EASY AND RELIABLE PROSTHETIC SOLUTIONS

The **screwless** self-locking taper connection simplifies the prosthetic procedures, reduces the number of components, eliminates the need for torque wrenches, increases the versatility during abutment preparation. The **absence of the abutment screw** permits procedures that are not possible with screwed connection systems, such as extra-oral cementation or integrated abutment crowns, which eliminate the risks associated with excess cement remaining in the peri-implant tissues. Furthermore the high stability of the connection leads to a dramatic reduction of prosthetic complications, ensuring maximum reliability.



### FIXED SCREW-RETAINED PROSTHESIS

The system provides a complete line of accessories for the fabrication of screw-retained prostheses with straight and 15°, 25° and 35° angled abutments in 4 different gingival heights. The Morse taper connection between abutment for screw-retained prosthesis and implant allows for easy and quick insertion of straight and angled abutments in any clinical situation. The abutments for screw-retained prosthesis are equipped with the Leone 360° connection, which permits a free positioning to 360° of the abutments on the dental cast allowing for a perfect parallelism, a considerable help for the passive fit of the prosthesis.



### CAD-CAM SOLUTIONS

The prosthetic advantages of the system are well-rendered using CAD-CAM technology, since the **absence of the screw access hole** facilitates digital scanning, CAD planning and the fabrication of the item. The design of the specific **MultiTech** abutments simplifies the construction of fully patient-customized abutments also with highly esthetic materials and allows optimal use of the new technologies.

Leone ABUTMENT range



I.P.



*The efficiency of simplicity!*



ORTHODONTICS and IMPLANTOLOGY

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ORTHODONTICS and IMPLANTOLOGY

## SURGICAL characteristics



**screwless**

### LEONE CONNECTION

The implant-abutment connection system, thanks to the properties of the **Morse taper** and the **absence of the abutment screw**, guarantees:

- no micro-gaps, thus perfect bacterial seal
  - no micro-movements, thus absolute stability
  - the option of subcrestal placement of the implants
- The internal hexagon allows an easy and precise implant placement with reduced number of components.



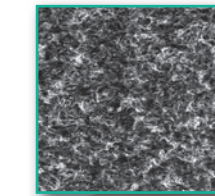
### PLATFORM SWITCHING

The "Platform Switching" design of the transmucosal portion increases the height and the volume of the soft tissue, thus sealing and protecting the underlying bone, and shifts the inflammatory cell infiltrate away from the crestal bone. In combination with the properties of the Morse taper connection it promotes the maintenance of the peri-implant tissues over time, as proven by long-term clinical studies.



### HRS SURFACE

The HRS (**High Rutile Surface**) surface is obtained through an exclusive sandblasting process which produces an implant surface roughness  $R_a = 2.5 \mu\text{m}$  and increases the presence of rutile (titanium oxide), a crucial element for osseointegration. The following cleaning treatments (passivation and decontamination) remove any organic and inorganic residues from the surface. As a result, the surface is extremely favourable for clot formation and subsequent osseointegration, ensuring reduced healing times and absolute predictability of the outcome.



### 3D PLANNING AND GUIDED SURGERY

The development of 3D Cone beam radiology is having a great impact in implantology for both the diagnostic and therapeutic aspects. The Leone Implant system can be found in the library of several 3D software programs that enable the clinician to visualize the relevant anatomical structures thus allowing a safer and more precise implant position planning. Some programs also allow the design and construction of a stent for guided surgery that replicates the 3D virtual planning and can also permit the abutment selection and adaptation, as well as provisional prosthesis production if immediate loading is possible.



Leone DRILL range

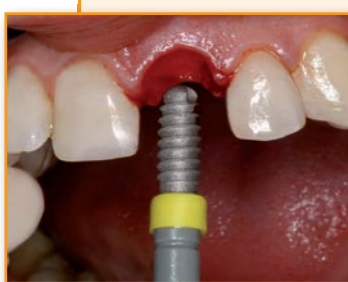


- cylindrical geometry
- atraumatic thread design
- hemispherical apex
- 3 implant diameters (3,3 – 4,1 – 4,8 mm)
- 4 implant lengths (8 – 10 – 12 – 14 mm)

## LEONE IMPLANT

The Leone implant is characterized by a cylindrical geometry and a thread design in accordance with ISO standard which guarantee atraumatic insertion in all types of bone, even in presence of high bone density. The 3,3 and 4,1 mm diameter implants are the optimal choice in many cases of limited horizontal bone availability. Numerous medium and long

term follow-up studies show the esthetic and functional success of Leone implants as well as the maintenance over time of the achieved results\*.



**ATRAUMATIC THREAD DESIGN** for safe insertion in all types of bone (standard ISO 5835)



**HEMISPHERICAL APEX** to avoid any damage to anatomical structures, such as the Schneiderian membrane in case of sinus lift procedure with simultaneous implant placement

**IMPLANT Ø 3,3** a narrow diameter implant for cases with limited mesio-distal and bucco-lingual/palatal bone availability

**IMPLANT Ø 4,1** an implant with outstanding mechanical strength despite the reduced horizontal dimension, ideal for both anterior and posterior restorations

**IMPLANT Ø 4,8** a wide diameter implant for the replacement of maxillary and mandibular molars

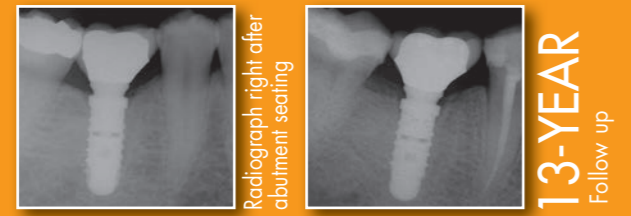
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 Constantly updated online bibliography: [www.leone.it/english/services/publications](http://www.leone.it/english/services/publications)

### THE CLINICAL CASE



**THE IDEAL IMPLANT IN CASE OF:**

- medium and high bone density
- limited horizontal bone availability
- crestal sinus lift



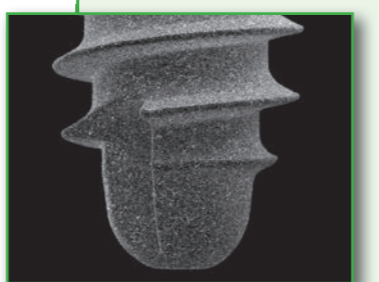
**13-YEAR Follow up**



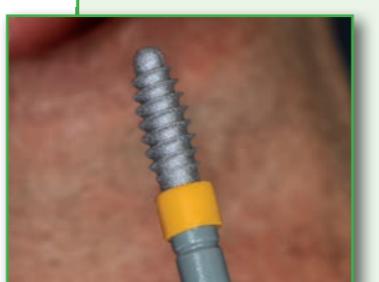
- root-form geometry
- over 50% increase in thread height
- conical apex
- 2 implant diameters (3,75 and 4,5 mm)
- 4 implant lengths (8 – 10 – 12 – 14 mm)

## LEONE MAX STABILITY IMPLANT

The Leone Max Stability implant features an innovative external macro-design specifically developed in order to obtain a high level of primary stability in case of implant placement in poor bone quality areas. Furthermore its geometry makes the Max Stability implant especially suitable for the insertion in post-extraction sockets and for some advanced surgical procedures, as it facilitates the insertion process by reducing the risk of fractures and fenestrations.



**ROOT-FORM** with tapered apex facilitating the penetration process



**INCREMENTAL APICAL THREADS** with increasing height to improve the insertion properties

**THREAD DESIGN** with over 50% increase in thread height compared to cylindrical Leone implants, thus leading to:

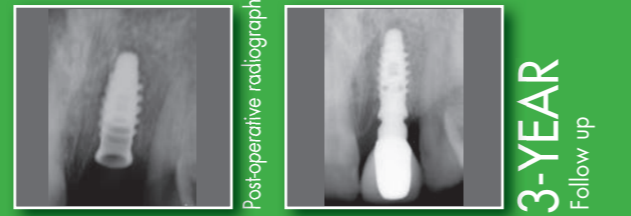
- over 50% higher insertion torque values compared to cylindrical implants with the same length and connection size
- increased bone-implant contact surface

### THE CLINICAL CASE



**THE IDEAL IMPLANT IN CASE OF:**

- poor bone density
- post-extraction sockets
- immediate loading
- ridge split



**3-YEAR Follow up**



- length of only 6,5 mm
- incremental threads with diameter up to 5 mm
- cylindrical geometry
- flat apex

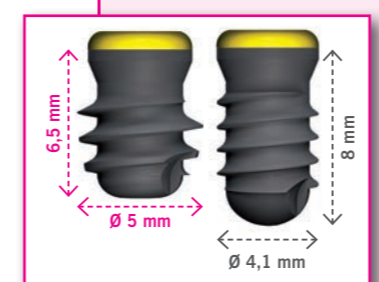
## LEONE SHORT IMPLANT

The Leone 6.5 short implant, characterized by its length reduced to 6,5 mm, is the ideal solution for cases with limited vertical bone height. In many situations it obviates the need for complex surgical procedures such as sinus lifts and inferior alveolar nerve transposition, avoiding sensitive anatomical structures with a high degree of safety. Avoiding advanced surgery results in reduced treatment time, reduced costs and increased patient acceptance.



**THREAD DESIGN** with over 125% increase in thread height compared to cylindrical Leone implants, thus leading to:

- high primary stability despite its reduced length
- good bone-implant contact surface area, comparable to that of a 4,1mm-diameter 8mm-long implant



**4,1 LEONE IMPLANT-ABUTMENT CONNECTION** which guarantees an outstanding biomechanical strength, of great importance taking into account the inevitably unfavourable crown-to-implant ratio

### THE CLINICAL CASE



**THE IDEAL IMPLANT IN CASE OF:**

- limited vertical bone availability



**5-YEAR Follow up**

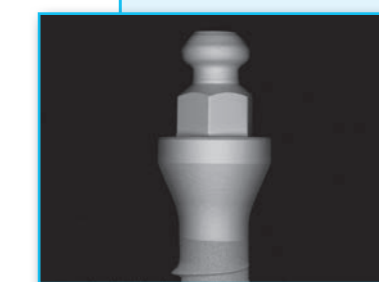


- implant with integrated ball head
- diameter of only 2,7 mm
- 4 endosseous lengths: 10 – 12 – 14 – 16 mm
- micro-housing: outer diameter 4,2 mm, height 2,8 mm

## LEONE MONO IMPLANT

The Leone monoimplant has been developed to stabilize overdentures in the lower jaw on 4 monoimplants placed at the level of the mandibular symphysis, in the area between the two foramina. The reduced diameter of only 2,7 mm allows for easy and minimally invasive insertion even in severely resorbed atrophic mandible.

Its self-tapping design provides excellent primary stability. The reduced size of the micro-housing permits re-use of existing dentures.



**SMOOTH, TAPERED NECK** to promote a good peri-implant soft tissue seal

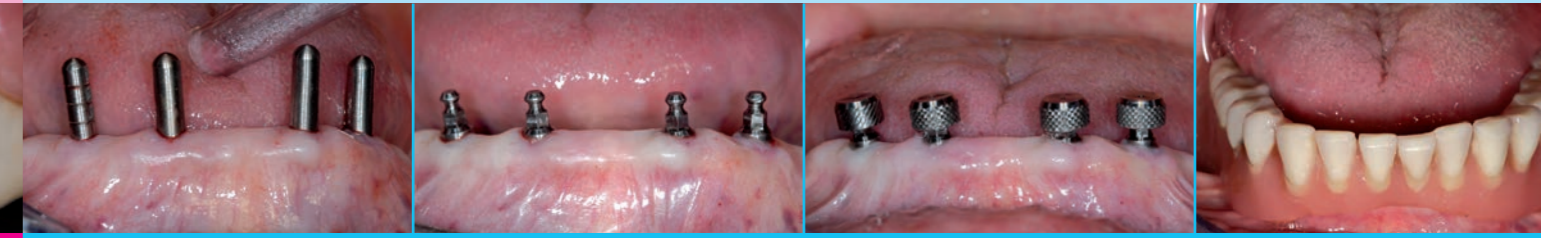
**TRANSMUCOSAL PORTION** in two different heights, 3 and 5 mm, for optimal adaptation to different soft tissue thicknesses



**EXCELLENT PRIMARY STABILITY** due to its self-tapping design

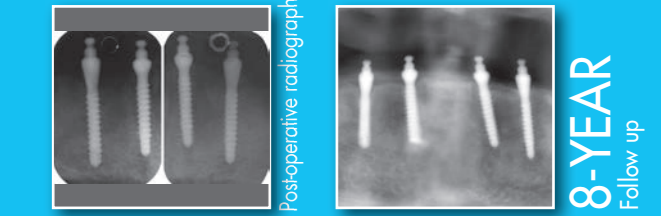
**TORSIONAL RESISTANCE** greater than 140 Ncm despite the small implant diameter

### THE CLINICAL CASE



**THE IDEAL IMPLANT FOR:**

- overdenture stabilization in atrophic edentulous mandibles



**8-YEAR Follow up**