

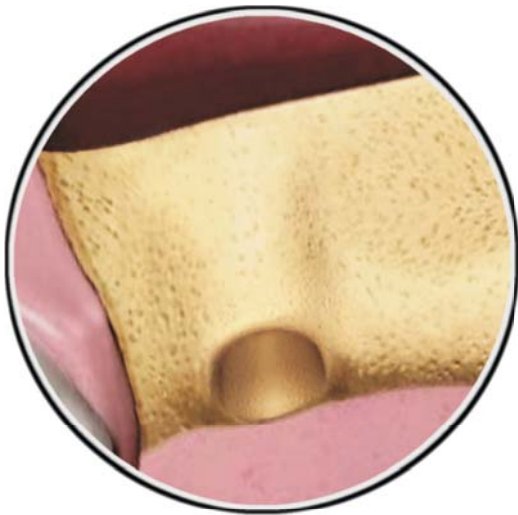
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Soft Dilating System *patented*

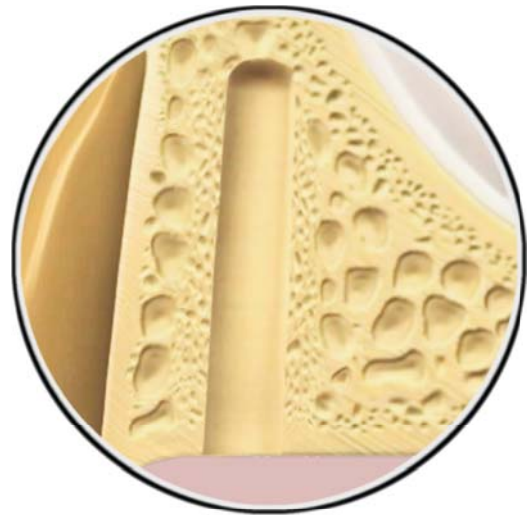
SDS

swiss made 

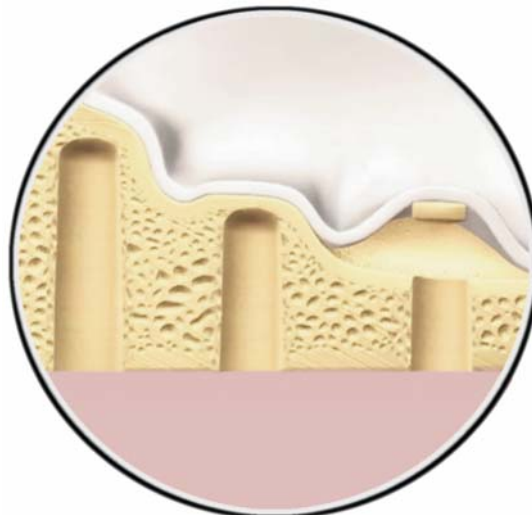
New Technique for the preparation of the implant bed



**PROGRESSIVE
BONE EXPANSION**



**PROGRESSIVE
BONE CONDENSATION**



**VERTICAL
EXPANSION**

**Soft Dilators, new progressive instruments
for the conformation of the implant socket**

Introduction

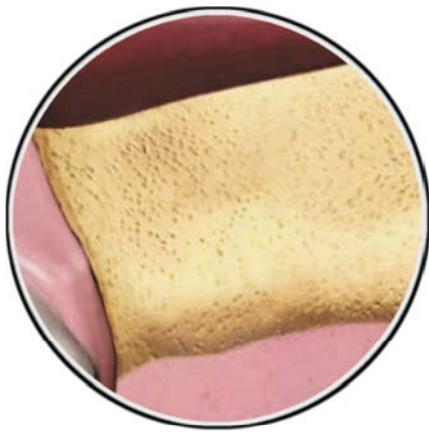
Nowadays, implants are used for all prosthetic indications.

The main factor limiting the use of implants is a reduced bone volume.

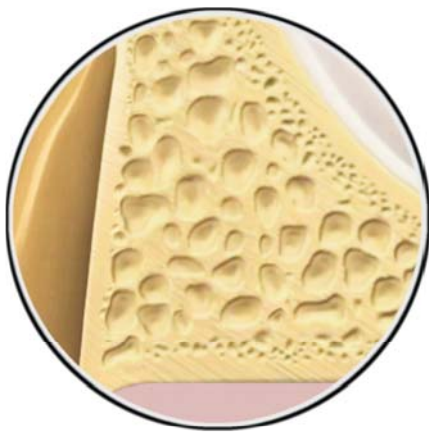
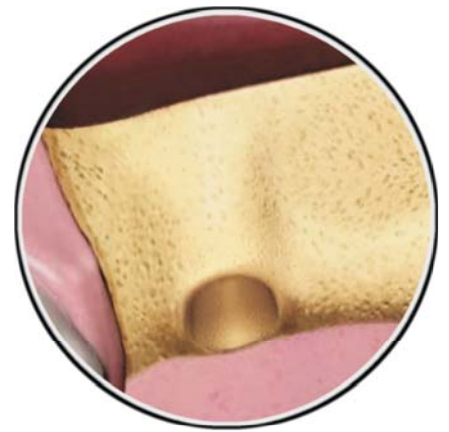
The possibility of using short implants with treated surfaces and placing implants with a simultaneous bone augmentation has greatly reduced the need for previous bone augmentation procedures.

Combined with bone augmentation procedures, the Soft Dilating System (SDS) allows to put implants in regions with very low bone volumes, reduces the aggressivity, the duration and the cost of the treatments.

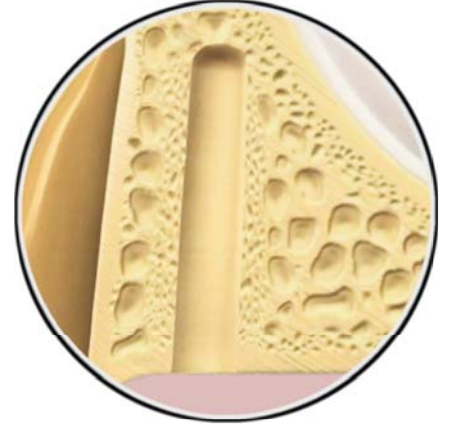
Functions of the Soft Dilating System



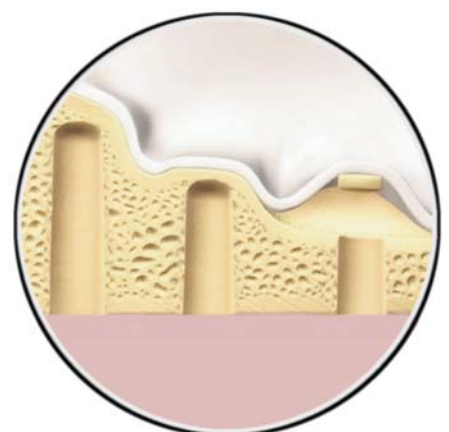
Progressive bone expansion,
allowing the placement of
implants in severely resorbed and
thin alveolar ridges.



Progressive bone condensation,
achieving a better primary stability
of the implants in case of low-density
bone structures.



Vertical expansion,
allowing a
sinuslift technique
according to Summers.



The SDS Indications

The Soft Dilating System:

- Allows the placement of implants in severely resorbed and thin alveolar ridges, through a **progressive bone expansion** of the alveolar ridge of the upper or lower jaw.

It thereby makes the implantation with a simultaneous bone augmentation easier and reduces the need of preliminary augmentation procedures of the bone width.

- Is indicated to increase the primary stability through a **progressive bone condensation** of the alveolar ridge of the upper or lower jaw in areas with low bone density.

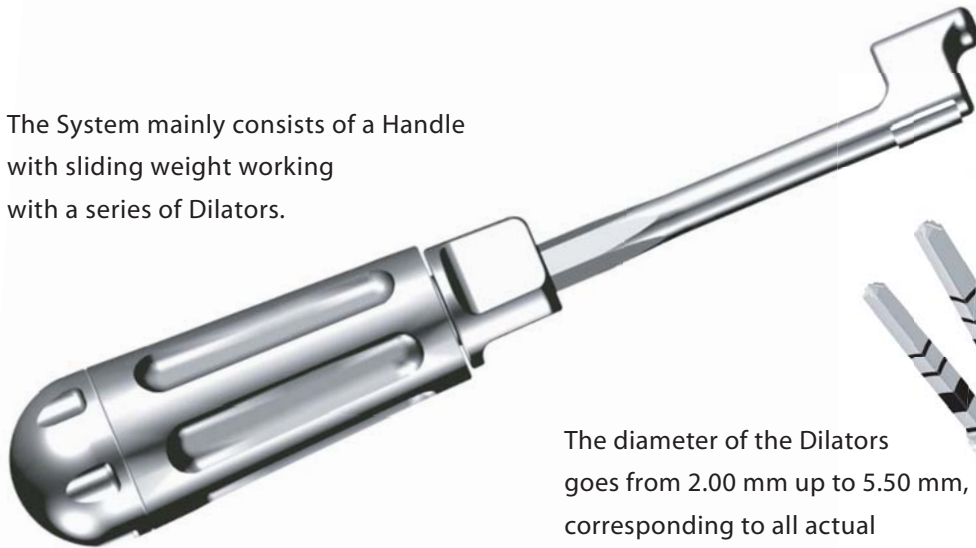
- Is also indicated to simultaneously proceed to a sinuslift technique (**vertical expansion**) according to Summers.

Generally, most implant sites can be prepared easily only with the Soft Dilating System. The SDS becomes therefore a main technique for bone preparation in Implantology.

For the clinical procedure, please read the operating manual with useful tips and tricks.

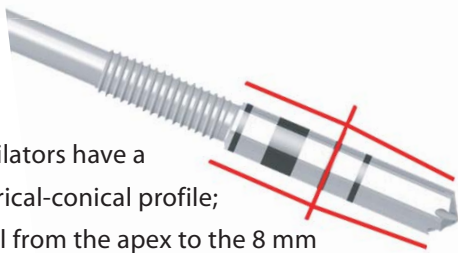
SDS Design and Operating Principle

The System mainly consists of a Handle with sliding weight working with a series of Dilators.

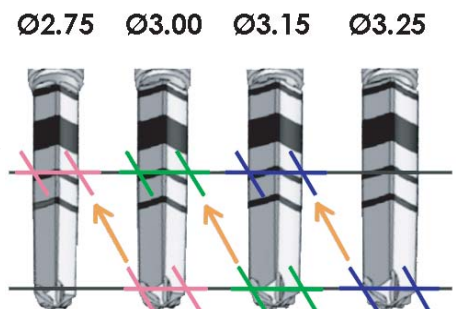


The diameter of the Dilators goes from 2.00 mm up to 5.50 mm, corresponding to all actual implant systems.

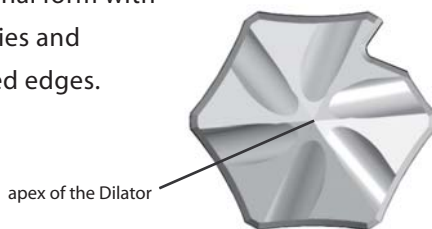
Soft Dilators have a cylindrical-conical profile; conical from the apex to the 8 mm mark, and then cylindrical.



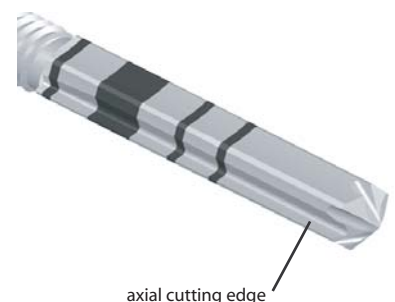
The sequence of Soft Dilators is designed with *linked* diameter increments: the diameter of the apex of each Dilator is actually identical and corresponding to the diameter of the cylindrical part of the previous Dilator.



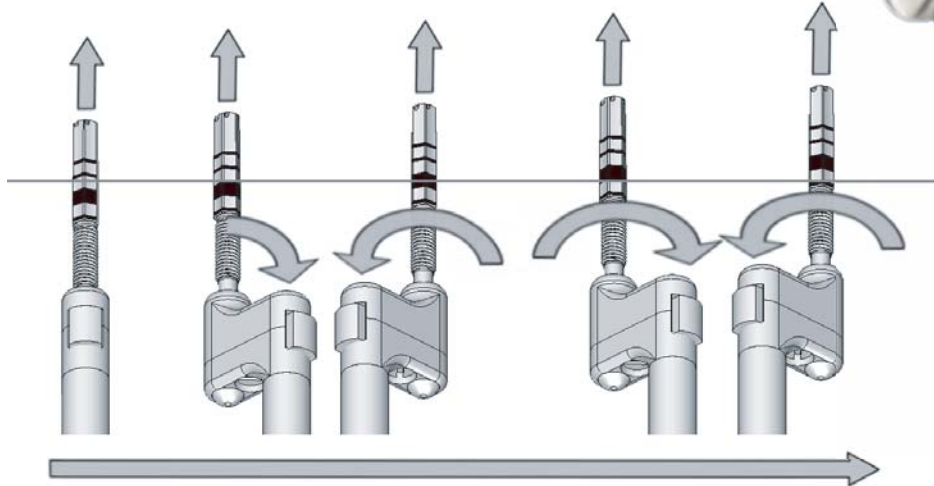
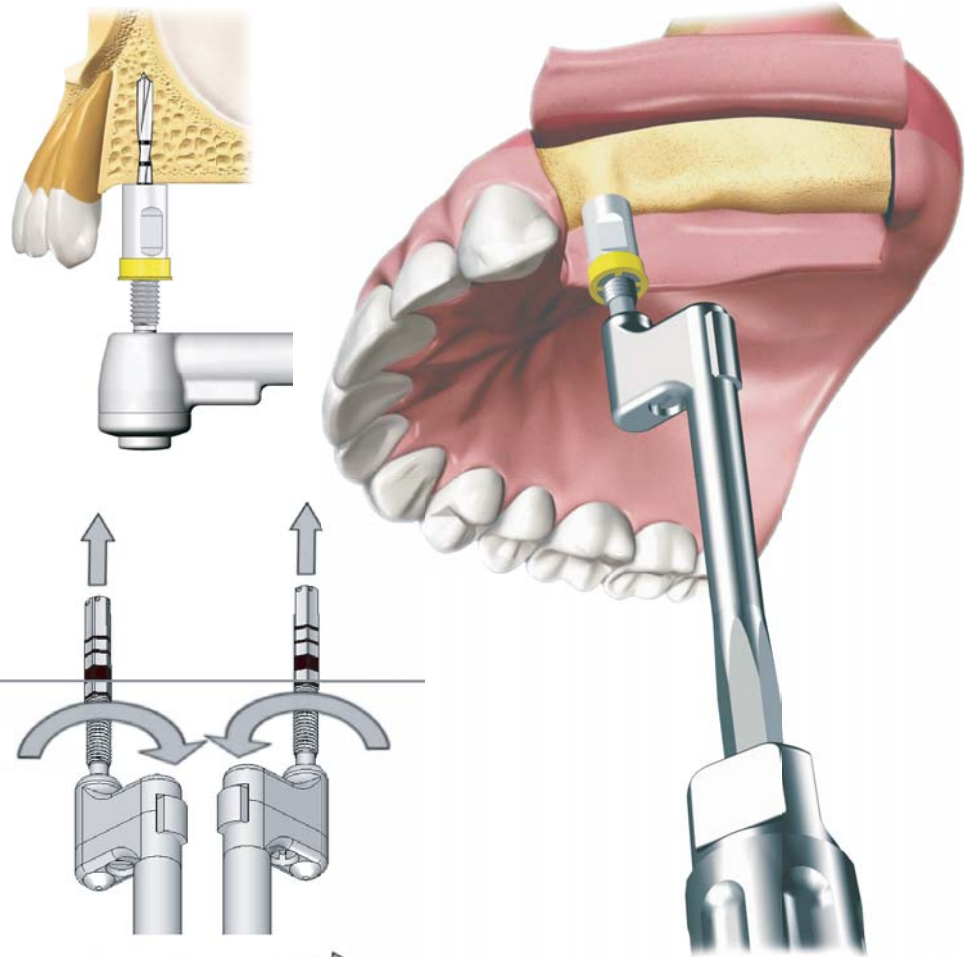
The cross-section shows a polygonal form with concavities and smoothed edges.



The only cutting parts are the apex and a single axial cutting edge, active only in reverse rotation.



The handling consists in a first pilot drilling of \varnothing 1.75 mm, then the use in sequence of the series of Dilators with the SDS Handle executing pushing-rotating movements. This alternate rotations, allow the preparation of the implant bed thru a progressive dilatation of the bone ridge and deliver, in a less aggressive way, a bore with circular section.

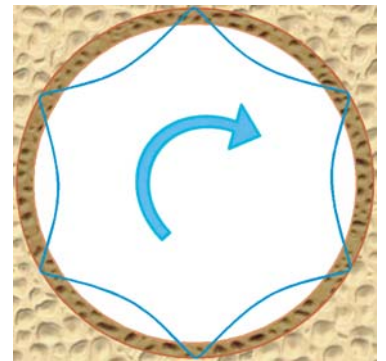
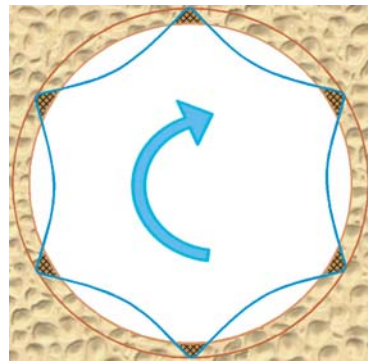


The smoothed edges and concavities of the instrument enable to operate using only low levels of force.

The unique design of the Soft Dilators with polygonal cross-section confers to the manipulation its specific **“soft” character** for the bone expansion or condensation.

During the insertion of the instrument only **low forces** are applied, as only the smoothed edges sink into the bone structure in a reduced area and the rotation realizes the dilatation without effort.

The sequential application of *linked* instruments allows the continuity of the Dilatation until the desired diameter has been reached.



These characteristics allow a “soft” technique avoiding the use of the Hammer and taking care of the bone tissue.

The axial cutting edge helps preventing the axial drift to the weaker wall of the implant site.

This “soft” dilatation prevents the risk of cortical dehiscences and bone fractures.

In comparison with the Soft Dilators, the round cross-section of all *classic osteotomes* applies much higher pressure on the surrounding bone, dictating the use of a hammer.

In comparison with *treaded conical expanders*, the Soft Dilators offer a less traumatic technique for thin cortical walls and allow a better control of the working axis.

Compared to *classic implant drills*, the Soft Dilators do not carve the surrounding bone tissue, which is gently expanded centrifugally. The cutting apex enables every instrument to fully reach its predetermined depth.

The telescopic sliding weight of the handle allows the application of gentle hits on the last Dilator, thus allowing the **vertical expansion** performing a sinuslift in the retromaxillar region (Summers’ technique).

All SDS Dilators have laser-depth markings and a shank with reverse micro-threading; this allows the coupling with a screwed DSS stop granting a micrometric setting (Drilling Security System - DSS).

We recommend to follow the Video Tour available on www.arsline.com.

Argumentations and benefits of the Soft Dilating System

The Progressive Bone Expansion with the SDS

- **can be realized starting from an alveolar ridge thickness of 2 mm**

? allows to place implants in severely resorbed alveolar crests

- **allows the placement of implants with wider diameters**

? increases the total bone contact surface and anchorage

- **the progressive bone expansion is under continuous manual control**

? limits the risk of cortical fractures

? limits the risk of dehiscences and apical fenestrations

? limits the exposure of implant threads

? improves the conditions for simultaneous bone regenerations¹⁾

- **prevents a drift error²⁾ in vestibular direction**

? a suitable placement of the implant is easier to reach

- **reduces the indications for previous bone grafts and frequent use of split crest techniques**

- **shapes the apex of a dental alveolus better than classical osteotomes or drills**

? is suitable for immediate post-extraction implants

- **flapless implantology is easier to realize³⁾**

? the Soft Dilators are adapted and improve guided implantology techniques

- **allows to proceed to a simultaneous sinus elevation (vertical expansion)**

? useful for posterior sectors of the upper jaw

1) The SDS allows to place the implant in an integer bone site and the placement of bone augmentation particles in contact with vascularised and live bone structures, not upon the implant threads.

2) The vestibular bone plate is often less corticalized and thinner than the lingual/palatal plate, and offers reduced mechanical resistance. Under these circumstances, during enlargement of the implant site with drills, percussion osteotomes or conical screw expanders, a drift error frequently occurs in vestibular direction against the axis of the pilot drill.

SDS, contrariwise, permits to limit this axial drift thanks to the axial cutting edge that take care to the vestibular cortical plate.

3) The SDS does not remove any bone chips, so it takes more care of the cortical vestibular plate and does not traumatize the attached gingiva. After a correctly centered pilot drilling, the creation of the implant site by dilatation through SDS provides much easier a suitable full intrabony positioning of the implant.

The Progressive Bone Condensation with the SDS

- **allows to exploit low density bone ridges**

? e.g.: the retromolar tuberosity of the upper jaw or in areas with gaps, caused by healing defects

? improves the primary stability of short implants or implants having a little bone anchorage (e.g.: in sinuslift procedures according to Summers' technique)

- **improves primary stability**

? increases the contact area between the implant and bone trabecula, thus promoting the osteointegration

- **improves the tactile feedback of your manipulation**

? gives improved assessment of the current local bone density and its load-bearing capacity during surgery

- **limits the risk of damaging the adjacent dental roots**

? makes a safe preparation of the implant site next to adjacent roots easier

Summary and Conclusions:

Soft Dilators are innovative surgical instruments for oral Implantology, which offer a true improvement of methods for the preparation of the implant bed.

In comparison with the presently available techniques, the Soft Dilating System makes the placement of implants in a reduced bone volume easier.

When used for **progressive bone expansion**, SDS delivers several benefits in terms of better utilization of the existing thickness of the bone ridge, allowing to place implants in bone ridges with a reduced thickness.

When used for **progressive bone condensation**, SDS allows a better primary stability which is helpful for the osteointegration.

The telescopic SDS handle also permits a simultaneous **vertical expansion**, by realizing a trans-alveolar sinus elevation according to Summers' technique.

The Soft Dilating System is mostly used manually with the SDS handle and sometimes with a very slow handpiece for some mandibular indications. This technique enables constant control of the progress of the operation, allowing you to better exploit the existing anatomy of the alveolar bone ridge and to limit the risks of bone damage.

The utilization technique is precise and less aggressive. Compared to other current techniques, it can be defined as "atraumatic" or characteristically "soft".

This System avoids the inconvenients of the instruments needing the use of a hammer, as well as the discomfort related to percussions for the patient or their possible complications, tinnitus, retinal detachment, ...

Soft Dilators are easy to use and simply require routine surgical experience. Their use is quickly trained. After short time of usage, you can easily discover and appreciate the interest of this technique in many clinic situations where SDS is able to simplify the realization of the treatment.

The Soft Dilating System is provided with common components, also useful for sinuslift procedures (SinusLift System – SLS), safety bone drilling (Drilling Security System – DSS) and complementary (to the SDS) bone splitting technique (Complementary Split Crest – CSC). A specific SDS handpiece 1:256 is available for mandibular use.

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