

## Implant line



## InthEx™ connection and mini implant

# since 1987

We have been designing and developing new solutions, striving towards making each phase of dentistry and prosthetics processes a little simpler and reproducible. The most valuable asset of our company is human being, the set of people who daily act, operate and work together, sharing the same objectives and the same satisfaction and pride in offering our clients a high quality service.

Our primary objective is to **DISPENSE KNOWLEDGE.** We are strong of over 30 years of Know-how developed in the sectors in which we operate, through clear, rapid and efficient communication. **Guaranteeing** to our clients a top quality service to win their confidence and keep it in the long term, allowing them to obtain the maximum professional advantage and therefore economic advantage. **WE VALUE YOUR SKILLS** 

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#### CREDIBILITY

We personally meet our clients face to face daily, to earn their trust, esteem and respect.



#### RELIABILITY

Through consistency we put what we declare into action.



#### TRASPARENCY

Due to conduct and procedures known and shared by all, as well as constant and comprehensive communication, we supply objective and verifiable information to allow our clients and users to choose in a free and independent way.

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#### PROVIDING

"Clever tools" so that the operator is able to act with efficiency, speed and without constraints on the quality of the product or service.



#### SERVICE

Focused on disclosing the procedures of use of the various products and sharing strategies aimed at involving the final user (patient).



#### **ILLUSTRATING**

The most suitable techniques in order to make the various working phases simpler and more ergonomic.



#### OFFERING

Detailed merchandise information relating to the characteristics of the materials used.

#### Innovation while maintaining structural characteristics:

this was the basis for our development of the ConEx<sup>™</sup> conometric connection. An internal cone conicity 5° and at a depth of 1.7 mm provides optimal stability of prosthetic posts. The anti-rotational component is provided by the 2.3 mm hexagon included on Matrix implant lines has been a flagship element of our products for 30 years.





## TRADITION between past...

We have been working on the design of high-tech implant-prosthetic devices for over thirty years.

#### INNOVATION



#### ....and future

With the changeover from "analogue" to "digital" dentistry, our task is to make complex procedures simple and understandable.

## SAFETY AND RELIABILITY SINCE 1994

## InthEx™ Internal Connection

The internal connection of MaTrix<sup>™</sup> implants ensures greater flexibility in 360° positioning.

In the surgical phase, the use of abutments for controlling the series "P" parallel assignment, allows to define the exact position that the angled prosthetic abutment should have.

The 3 mm depth of engagement of the internal implant-abutment interface gives the connection higher stability due to the large contact area.

The "double connection" at the coronal level increases the long term resistance of the structure. The design of MaTrix<sup>™</sup> increases the implant strength and reduces the causes of mechanical stress because of the special geometry, which increases the stabilisation of the implant-abutment mating.

The depth of the InthEx<sup>™</sup> internal connection allows the head of the prosthetic screw to be placed in a more apical position compared to traditional connections. This allows a greater angle of preparation relative to the correction that the dental technician can make to the body of the abutment in the case of angled positioning of the implant fixture or for other prosthetic needs. As is well known, keeping the prosthetic screw head integral is essential in order to be able to perform preloading manoeuvres correctly. The use of the InthEx<sup>™</sup> internal connection in combination with aesthetic implants which have been created for the maintenance of the crestal bone, allows maximum benefit from Platform Switching<sup>™</sup> protocol, which is especially useful in cases of rehabilitation when trying to achieve maximum conservation of the bone and papillary structures in aesthetic areas.

Comparison between InthEx™ connection ("R Thunder" implant Ø 3.3 mm) and ConEx™ connection ("R ConEx™" implant Ø 3.3 mm)

Anti-rotational Hexagon: depth 3 mm, width 2.3 mm Screw: length 7 mm, diameter 2 mm Large contact surface Optimal tolerance within 10 microns

Double connection

Greater retention of the abutment Discharge of tensions into the well Improved aesthetic appearance

InthEx™ connection "R Thunder" implant Ø 3.3 mm

## **Connection Stability**



The InthEx<sup>™</sup> internal connection, due to the depth of insertion of the prosthetic abutment inside the body of the implant, ensures greater stability of the abutment/implant assembly and greater resistance to the bending forces of the lateral loads. This peculiar characteristic of the InthEx<sup>™</sup> internal connection is particularly useful in the case of rehabilitation with an unfavourable crown/implant ratio, where the depth of engagement effectively counteracts the bending forces. In this way, not only the prosthetic screw but the whole connection contributes to opposing the load displacement with the result of a more uniform distribution of mechanic stress.

#### **IMMEDIATE LOADING**

The internal MaTrix<sup>™</sup> connection system only requires a 20 Ncm preload of the prosthetic abutment. In the case of bone situations which do not allow optimal stabilisation of the implant, this avoids the use of torque forces which could jeopardise the primary / secondary stability of the implant, especially in the case of poorly mineralised bone. The MaTrix<sup>™</sup> connection ensures greater rotational stability of the abutment with a screwing torque of only 20 Ncm.



Single-axial machine \*Test details are available on request.

#### Fatigue test according to standard UNI EN ISO 14801

Tests were carried out on MaTrix<sup>™</sup> Ø 3.3 mm implants in order to determine the dynamic loading that delivers an infinite life of the component set at 5,000,000 cycles (dynamic fatigue). A single-axis machine was used for Italsigma static and dynamic tests, using a load cell with a maximum capacity of 3 kN, of UNI EN ISO 7500-1:2006 class 0.5. The loading application took place as described in standard UNI EN ISO 14801. The tests showed that the MaTrix<sup>™</sup> implants can resist a maximum load of 247 N, a significantly higher value than the results obtained for the implants of competitor companies.

## Platform Switching

SPECIAL FEATURES OF THE MATRIX ™ IMPLANTS TYPE "S" AND "AESTHETIC"

Types "Y", "R", "F", and type "S" short implants were created for the Platform Switching technique, which consists in the reduction of the diameter of the abutment compared to the diameter of the implant screw (e.g. implant ø 4.5, abutment ø 3.8).

The prosthetic platform also consists of a 45° inclined plane with the angle rounded where it joins the vertical surface.

With this morphology the margin of the implant – abutment joint is moved or 'switched' towards the centre of the implant axis, moving away in fact from the crestal bone the critical zone of re-absorption since the inflammatory infiltrate, which is formed on all implants in the implant - abutment interface, stops in the inclined plane above the implant platform and not laterally, thus reducing peri-implant bone remodelling.

The advantages of this technique, therefore, are that it maintains the integrity of the bone and consequently the peri-implant soft tissue.

These characteristics make the type 'Y' and type 'R' aesthetic implants particularly recommended for cases of reduced residual bone height and in areas of high aesthetic significance.



Presence of funnel-shaped bone re-bsorption at a crestal level





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## MATRIX<sup>®</sup> IMPLANT SURFACE SLA<sup>®</sup> Sand-blasted, Large grift, Acid-attacked

The surface treatments provide a preliminary sanding process with large grain sand and acid etching "Sand-blasted, Large grit, Acid-attacked" SLA®.

\* SLA® is a registered trademark by the Institut Strauman AG Switzerland

Figures 1 and 2 show images of the threaded part of the implant (at low magnification) and highlight the good homogeneity of the treatment.

Figure 2 allows to observe major cavities formed due to the sanding process.

Figures 3 and 4 refer to the results of the tests on experimental samples indicating the absence of toxic effects, in compliance with the indications of the standard EN ISO 10993-5 1999.

Figure 5 highlights the details of the roughness imparted by the treatment.









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## "R Thunder" implant "TH" series



## 2008

It was 1994 when we first introduced the concept of an "active transmucosal pathway" for the correct maintenance of soft tissues.

This particular design allows the soft tissues to fully adapt around the collar of the implant. This drastically reduces the risk of peri-implantitis, avoids resorption of the crestal bone and enhances the aesthetic and functional prosthetic features over time. In recent years, clinical results have demonstrated the validity of this morphology, prompting an increasing number of companies to embrace this principle.

Implant radiography (1994)



Active transmucosal route system

1994



MaTrix™ Implant line \_InthEx™connection

## Type "R Thunder" conical implant



Type "R Thunder" implant differs from the type "R" implant in that a 2,6 mm machined transmucosal path has been demonstrated in the crown. Compatibility with the soft tissues plays a decisive role in the long-term maintenance of implantprosthetic devices.

#### - CHARACTERISTICS:

- Better adaptation of soft tissues aimed at improving the maintenance of hard tissues over time and preventing periimplantitis, due to the morphology of the polished collar.
- Availability of the Ø 3.3 mm: the narrowest on the market for implants with transmucosal collar
- Optimisation of both vertical and horizontal loading
- Increased overall implant surface

#### Available heights and diameters:

- Ø 3,3 mm L. 9 11 13 mm
- Ø 3,8 mm L. 7 9 11 13 mm
- Ø 4,5 mm L. 7 9 11 13 mm

### Type "R" conical implant -

The outer profile of the implant consists of a cylindrical body in the cervical portion to avoid compression under load of the cortical bone, then proceeds with the conical body up to the apical part, all surrounded by spirals with regular pitch.

#### - CHARACTERISTICS: -

- Easy preparation of the implant site
- Elimination of the risks of over tightening the implant
- Particularly suitable for use in areas where the bone spaces are notably reduced in the apical regions (e.g. individual elements)

- Ø 3,3 mm L. 9 11 13 15 mm
- Ø 3,8 mm L. 9 11 13 15 mm
- Ø 4,5 mm L. 9 11 13 15 mm
- Ø 5,2 mm L. 9 11 13 mm



- Same surgical instruments
- Use of all the prosthetic components already present in the MaTrix™ implant system (InthEx™ connection).



- Same surgical components (conical drills) used for the type "R Thunder", "CF", "R aesthetic", "F", "S" and "SL"
- Same surgical instruments
- Use of all the prosthetic components already present in the MaTrix™ implant system (InthEx™ connection).

## Type "R Aesthetic" conical implant



Type "R Aesthetic" implant was created specifically for the Platform Switching technique. This outer morphology, much appreciated by MaTrix™ implant system users, allows the exploitation of all the characteristics of the type "R" conical implants without having to forego the advantages of Platform Switching.

#### - CHARACTERISTICS:

- Rounded 45° inclined platform to allow use of the undersized abutment.
- Full Space SLA® treatment on all the vertical surface of the implant
- Truncated conical body with regular spirals.
- Large bone-implant contact surface areas also in the crestal region.

#### Available heights and diameters:

- Ø 3,8 mm with platform Ø 3,3 mm L. 9 11 13 15 mm
- Ø 4,5 mm with platform Ø 3,8 mm L. 9 11 13 15 mm
- Ø 5,2 mm with platform Ø 4,5 mm L. 9 11 13 mm

### Type "CF" conical implant



Type "CF" implant is the perfect synthesis between ease of insertion and positioning precision. This feature is very useful, especially in cases where the operation is performed using a "guided software" surgery

#### - CHARACTERISTICS: -

- Maximum congruence between implant site and implant surface
- Maximum primary stability with minimal surgical trauma
- Self-centring

technique. With this technique, the implant maintains its trajectory during insertion, even in the event of simultaneous cortical and medullary bone impacts in the vertical direction. The form is cylindrical with a normal coil in the cervical and central section. The apical portion is tapered (conical), to make it easier for the practitioner to insert, which therefore makes it selfcentring.

- Ø 3,3 mm L. 9 11 13 15 mm
- Ø 3,8 mm L. 9 11 13 15 mm
- Ø 4,5 mm L. 9 11 13 15 mm



- Same surgical components (conical drills) used for the type "R Thunder", "CF", "R", "F", "S" and "SL"
- Same surgical instruments
- Use of all the prosthetic components already present in the MaTrix™ implant system (InthEx™ connection).



- Same surgical components (conical drills) used for the type "R Thunder", "R", "R aesthetic", "F", "S" and "SL"
- Same surgical instruments
- Use of all the prosthetic components already present in the MaTrix™ implant system (InthEx™ connection).

## Type "C" cylindrical implant



Type "C" implant design is to preserve the crestal bone level. This feature ensures long-lasting stability of the peri-implant soft tissues, providing predictable aesthetic restoration work, especially in cases of reduced residual bone height.

#### CHARACTERISTICS:

- Avoiding the use of of a screw tap
- Reaching maximum congruence between the implanting site and the implant surface
- Maximum primary stability with minimum surgical trauma

#### Available heights and diameters:

- Ø 3,3 mm L. 9 11 13 15 mm
- Ø 3,8 mm L. 9 11 13 15 mm
- Ø 4,5 mm L. 9 11 13 15 mm

### Type "Y Aesthetic" cylindrical implant

The outer profile of the implant consists of a conical body surrounded by spirals that progressively decrease in height and thickness from the apex to the cervical third. In the cervical area some micro spirals are present to increase the total contact surface area and primary stability.

#### CHARACTERISTICS: -

- Rounded 45° inclined platform to allow use of the undersized abutment.
- Full Space SLA® treatment on all the vertical surface of the implant
- Unique surgical phase in the case of combined use of healing abutments of various sizes
- Large bone-implant contact surface areas also in the crestal region.

- Ø 3,8 mm with platform Ø 3,3 mm L. 9 11 13 mm
- Ø 4,5 mm with platform Ø 3,8 mm L. 9 11 13 mm
- Ø 5,2 mm with platform Ø 4,5 mm L. 9 11 13 mm



- Same surgical components (standard drills) used for the type "T" and "Y aesthetic")
- Same surgical instruments
- Use of all the prosthetic components already present in the MaTrix™ implant system (InthEx™ connection).



Type "Y Aesthetic" implant was created specifically for the Platform Switching technique<sup>1</sup>.

The particular coronal shape allows the preservation of the crestal bone, that ensures the stability of the periimplant soft tissue, by allowing the realisation of predictable aesthetic prosthetic restorations.

These characterised make the MaTrix<sup>™</sup> type "Y Aesthetic" implant particularly recommended for cases of reduced residual bone height and in areas of high aesthetic significance.

Bibliography:

 Lazzara RJ, Porter SS. Platform Switching: a new concept in implant dentistry for controlling post-restorative crestal bone levels. Accepted for pubblication, Int J Periodontics Restorative Dent. 2006; 26: 9-17.

- Same surgical components (standard drills) used for the type "T "and "C"
- Same surgical instruments
- Use of all the prosthetic components already present in the MaTrix<sup>™</sup> implant system (InthEx<sup>™</sup> connection).

### Type "F" *Fast* rapid progression Aesthetic implant



Type "F" implant maintains the same connection characteristics of the MaTrix™ implant system. The outer design of the body and the spirals allow easy insertion and excellent primary stability even in anatomically compromised situations.

#### -CHARACTERISTICS:

- Rounded 45° inclined platform to allow use of the undersized abutment
- Full Space SLA® treatment on all the vertical surface of the implant
- Conical body with spirals decreasing towards the coronal area
- High surface areas of boneimplant contact even in the crestal region
- Self-drilling: the particular design of the "double principle" spirals allows rapid penetration in bone of any condition

#### Available heights and diameters:

- Ø 3,8 mm with platform Ø 3,3 mm L. 11 13 15 mm
- Ø 4,5 mm with platform Ø 3,8 mm L. 11 13 15 mm
- Ø 5,2 mm with platform Ø 4,5 mm L. 11 13 mm

### Type "T" transgingival implant



Type "T" implant morphology is very useful in the clinical situations where the crestal width is limited compared to the volume of the element to be replaced (e.g. posterior quadrant), as it provides a platform greater than the diameter of the implant. The outer design and the depth of the

spirals make the type "T" implant particularly adapted to situations of poor bone density, in post-extraction sites and in all cases where primary stability is a fundamental element.

CHARACTERISTICS:

• Single surgical phase in the

abutments of varying sizes

Package includes healing screws

event of combined use of healing

- Ø 3,3 mm with platform Ø 3,8 mm L. 7 9 11 13 15 mm
- Ø 3,8 mm with platform Ø 4,5 mm L. 7 9 11 13 15 mm
- Ø 4,5 mm with platform Ø 5,2 mm L. 7 9 11 13 15 mm
- Ø 5,2 mm with platform Ø 5,9 mm L. 7 9 11 13 15 mm



Due to its "double principle" spirals the progression of insertion is particularly rapid and precise in all types of bone. Micro-spirals in cervical area to increase total contact surface area and primary stability

- Same surgical components (conical drills) used for the type "R Thunder", "CF", "R aesthetic", "R", "S" and "SL"
- Same surgical instruments
- Use of all the prosthetic components already present in the MaTrix<sup>™</sup> implant system (InthEx<sup>™</sup> connection).



- Same surgical components (standard drills) used for the type "C" and "Y aesthetic"
- Same surgical instruments
- Use of all the prosthetic components already present in the MaTrix™ implant system (InthEx™ connection).

### Type "SL" large spiral implant



Type "SL" large spiral implant is particularly recommended in situations of poor bone density. The main application areas are therefore post-extraction sites and posterior quadrants of the upper jaw. By virtue of this, the coronal portion is increased to allow optimal prosthetic support to the specific dental elements which must be supported. Moreover, such countersinking is not subjected to surface treatment, therefore it is fact transgingival. It is the ideal solution for immediate load implant-prosthetic protocols.

#### - CHARACTERISTICS: -

- Countersinking and greater platform, non treated
- Conical body with wide spirals which follow its profile
- Possibility of using the compactor screw tap in the preparation of the site in areas with poorly mineralised bone
- Large bone-implant surface area contact
- High primary stability, even with poorly mineralised bone tissue

#### Available heights and diameters:

- Ø 3,3 mm with platform Ø 4,5 mm L. 9 11 13 15 mm Spiral Ø 4,8 mm
- Ø 3,8 mm with platform Ø 5,2 mm L. 9 11 13 15 mm Spiral Ø 5,5 mm

### Type "S" Short implant

Type "S" short implants are normally used to avoid involving sensitive anatomic structures, such as the maxillary sinus or the alveolar nerve. Just a few millimetres of bone tissue is enough to insert a short implant and to avoid long and laborious treatments of bone regeneration.

#### -CHARACTERISTICS: -

- Simplicity in the preparation of the implant site
- Elimination of the risks of overimplantation
- Excellent adaptation to areas where bone spaces are greatly reduced in apical areas (eg. single elements)

- Ø 4,5 mm with platform Ø 3,3 mm L. 5 7 mm
- Ø 5,2 mm with platform Ø 3,8 mm L. 5 7 mm



- Same surgical components (conical drills) used for the type "R Thunder", "CF", "R aesthetic", "F", "S" and "R"
- Same surgical instruments
- Use of all the prosthetic components already present in the MaTrix™ implant system (InthEx™ connection).



We have focused a lot of attention on creating implants with a length equal to 5 mm, characterised by very sharp spirals which allow easy penetration, even in strongly mineralised bone, and at the same time allow compacting low density bone, creating significant primary stability within just a few mm. Such implants allow to treat areas of the jaw which have a distance of only 7 mm between the alveolar crest and the Lower Alveolar Nerve and at the upper jaw level a distance of only 3 mm between the alveolar crest and the sinus floor.

- Same surgical components (conical drills) used for the type "R Thunder", "CF", "R aesthetic", "F", "R" and "SL"
- Same surgical instruments
- Use of all the prosthetic components already present in the MaTrix<sup>™</sup> implant system (InthEx<sup>™</sup> connection).



## MaTrix™ Implant line \_MINI implant

### **MINI** implant



MINI implant can be used as a provisional implant:

 in the non-treated version, when provisional fixed or removable application is desired, whilst waiting for standard osteo-integrating implants;

#### - CHARACTERISTICS: -

- Excellent primary stability
- Reduction of bone trauma due to the double-step turns
- as a definitive implant when the space available is small (lower incisors), when the bone ridges are thin, and there is no desire to proceed with additional surgical techniques, or as a cheaper solution (stabilising an existing prosthesis).

#### Available heights and diameters:

• Ø 2,5 mm - L. 9 - 11 - 13 mm - Ball retention Ø 1,8 - 2,1 mm



The emerging section consists of a multi-function abutment and can be used for the cemented fixed prosthesis using the square base, or as an o-ring abutment, since the sphere is positioned above the square abutment.

• Use of all the prosthetic components already present in the MaTrix™ implant system.



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