



UNIVERSE Catalogue

UNIVERSE where union is strength

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CERTIFICATIONS

Quality Maintenance is IML's guiding principle in a lifetime project embodied in the IML Production Protocol, a constantly evolving tool applied to the daily production of each component. IML SA products are marked Medical Devices:

• FDA 510 (k) approved

IML SA's Quality Management for the design, manufacture, and marketing of dental implants, instrumentation, and related accessories complies with the Directives and regulations in force.

• EC (Class I) and EC 0425 (Class IIb and Class IIa),

manufactured in accordance with Medical Devices Directive 93/42/EEC and subsequent modifi cation, amendments, and supplements.

• [ICIM]

UNI-EN ISO 9001:2015 UNI CEI EN ISO 13485:2012





UNIVERSE SYSTEM

Best performance in the cases:

- any bone density
- post extraction
- delayed loading
- immediate loading

Passing screw locked by a Morse taper connection

Connection interface up to ••••••••• H 5.5 mm

SL Surface Treatment •••••••

•Single platform for all diameters

•••••• Switching Platform ••••• Micro-grooved Collar

Internal connection locking the taper to the internal dodecagon using a passing screw

Self-tapping screw tip ••••

Alternating double spiral, square, and spur

Implant Body

Universe, with its particular conical shape, offers significant benefits for a wide spectrum of clinical applications providing excellent aesthetic results.

The implant features a highly innovative thread design. This special morphology, due to the combination of the spiral squared and spiral buttress threads, is able to increase the implant surface by 20% compared to the same implant without buttress threads providing a greater and more uniform area of contact between bone and implant speeding up the osteointegration process.

The alternate buttress and square double spiral loop generates a perfect balance between intrusive, compressive, and diverging forces capable of providing the bone with exceptional growth stimuli.

The strong threads are designed for the added compression and surface area required in soft bone placement in order to fill void spaces around the threads by ensuring an immediate primary stability.

Indeed, Universe, shows exceptional self-drilling properties which facilitate the implant placement and redirection in D1 and D2 bone types.

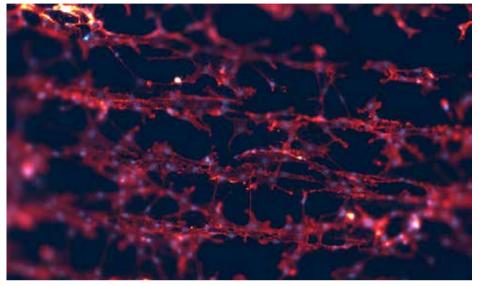
Universe stands out also for its excellent apical part design self-drilling and self-tapping.

Best performance in the cases:

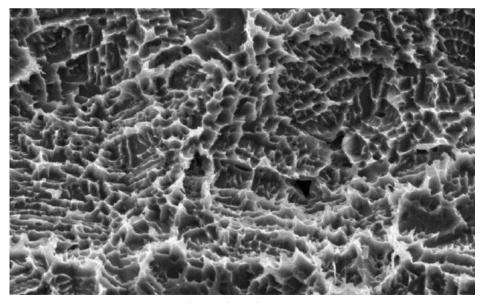
- any bone density
- post extraction
- delayed loading
- immediate loading



SL surface treatment



Pic 1. Details of the cellular microstructure - branched and dendritic, with long filopodia and complex morphology - of an IML SL treated implant.



Pic 2. Details under the microscope of the surface of an IML SL treated implant.

The IML Research and Development and of the surface chemistry developed by team, in partnership with prestigious the IML Research and Development team. chemistry laboratories which specialise in According to reports of the University of implantology, has formulated the optimum Turin and in accordance with protocols surface treatment for their implants: the SL treatment.

entrusted to the Polytechnic of Turin and to the University of Turin, which also periodically check production lots.

to the best SLA® treatments, the most documented in the literature, and it is carried out using a sand-blasting technique, with different grain sizes, followed by etching of the surface using acid solutions.

structure for anchoring osteoblasts and promotes good integration of the implant with the bone tissue. In fact, this type of Another fundamental factor, determined treatment suits any type of bone thanks by the surface treatment and constantly to its ability to increase primary stability even in the presence of atrophic sites or compromised biological tissue.

Cell adhesion and roughness: laboratory analysis on IML SL treated implants

surface treatment in determining the speed and quality of osseointegration of a dental implant, IML has always invested considerable resources in designing surfaces that facilitate the cell adhesion. IML SL treated surfaces have an optimal The tests carried out by the University of Turin on implants with IML SL treatment (Pic 2) confirm the effectiveness of the topography

of the international literature, 24 hours after cell seeding on Universe SL treated The performance monitoring has been implants, it is possible to appreciate the uniformity of the growth and of the cell adhesion over the entire implant surface.

Furthermore, observing by microscope IML SL treatment is technically comparable the nuclei (marked in blue) and the cytoskeleton (marked in red), it is evident that after 24 hours the cells not only have a very branched growth, with long filopodia and a complex morphology, but they are also multiplying in number. These are all The resulting surface has an appropriate indicators of the cellular behaviour on the IML SL treated surface. (Pic 1)

> monitored by laboratory analysis, is the roughness, that is the result of the unevenness on the surface.

During the surface analysis on Universe implants, the CNR (National Research Council) of Turin examines the average roughness (Ra/Sa), the Skewness parameter Aware of the key role played by the (Rsk/Ssk), representing the prevalent symmetry, and the Kurtosis parameter (Rku/ Sku), representing the indentation density. The resulting values, in relation to the international literature, confirm that the roughness, homogeneously distributed.

Decontamination

Even the decontamination process used for IML implants was developed in collaboration with the Research and Development team of our prestigious Italian universities partners.

This is a two-stage process, the second stage being composed of passing the implants through a plasma reactor. The "PLASMA REACTOR" project aimed to build a machine with suitable characteristics for treating dental implants and to define the optimal operating procedure and was conducted in close co-operation with the Department of Applied Science and Technology of the Polytechnic University of Turin and the Department of Surgical Sciences at the University of Turin's CIR Dental School.

Phase 1

• Objective: inorganic waste removal, mechanical machining, and surface treatments leave residues such as carbon and aluminium, universally considered possible causes of implants failing to osteointegrate;

• Procedure: liquid solution treatment;

Phase 2

• Objective: organic contamination removal, such as removal of pro-inflammatory agents;

• Procedure: treatment using gas cleaning agents applied via an electro-chemical process performed in the plasma reactor.



Implant neck



The collar, which has microgrooves, ends with a smooth switching platform that becomes more prominent as the diameter of the implant. It provides bone maintenance ensuring costant gingiva aesthetic impact.

Advantages:

- Increased bone distance in the connection between abutment and implant, the point where the bacterial load attaches
- Reduction of inflammatory phenomena
- Better peri-implant tissue preservation
- Better maintenance of crestal bone level



Taper internal connection

A true "cold welding" in the taper Implant-abutment connection is produced by contact pressure between the surface of the female cone of the implant and that of the male cone of the abutment.

The friction created between the two surfaces of equal conicity tightened to 35 Ncm generates direct, durable, and waterproof interlocking. In fact, this type of connection is the only one that approaches the ideal condition of a monoblock implant, which is the one used in the monophasic system, universally proven to be longer-lasting than biphasic systems.

However, being able to mechanically achieve a perfect Morse tapered connection requires great attention and special skills starting from the design stage.

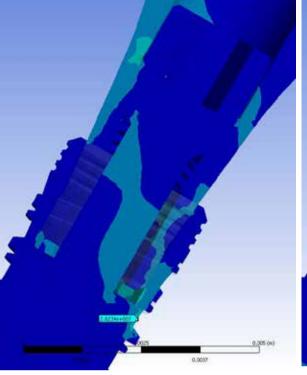
IML's designers and mechanics know how to detect and evaluate each critical point in order to produce perfect components whose connection not only works well during the project but especially also in the patient's mouth throughout their life.

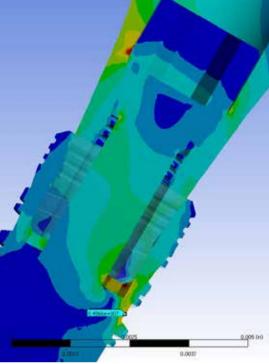
As demonstrated by numerous studies carried out around the world, the resulting system is effective and reliable.

(Bibliography page 42, rif. 1)

Advantages:

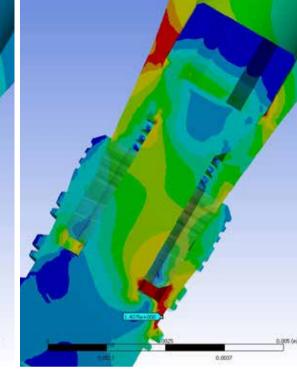
- Elimination of the passage of fluids and so bacterial colonization
- Elimination of micromovements at the interface between the components resulting in greater mechanical stability
- Low incidence of clinical complications
- Reduction of peri-implant infections
- Significant reduction in implant failures



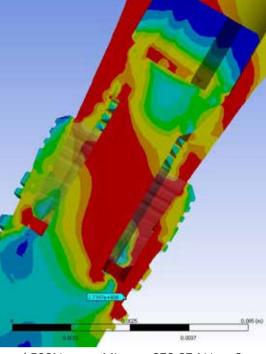


Load 50N σ von Mises = 28.23 N/mm2

Load 150N σ von Mises = 84.86 N/mm2







Load 500N σ von Mises = 273.97 N/mm2

The Universe implant has the advantage of a locking taper connection with a passing screw which achieves a precise and functionally perfect fit when coupled with a double internal hexagon. A design choice facilitating procedures during the surgical phase.

- Perfect antibacterial seal
- 12 Possible Abutment Positionings

The decisive factor in achieving complete system stability is to determine the function of the passing screw, which must guarantee the implant-abutment connection. This work is not easy as the screw is repeatedly subject to vibration fatigue which naturally tends to cause the unscrewing of the screw from its seat.

Here the solution identified by IML is the taper connection of the screw head inside the abutment.





The Universe implant connection is not only designed to guarantee correct implementation of the benefits of a locking taper connection but also those of a "one piece" implant.

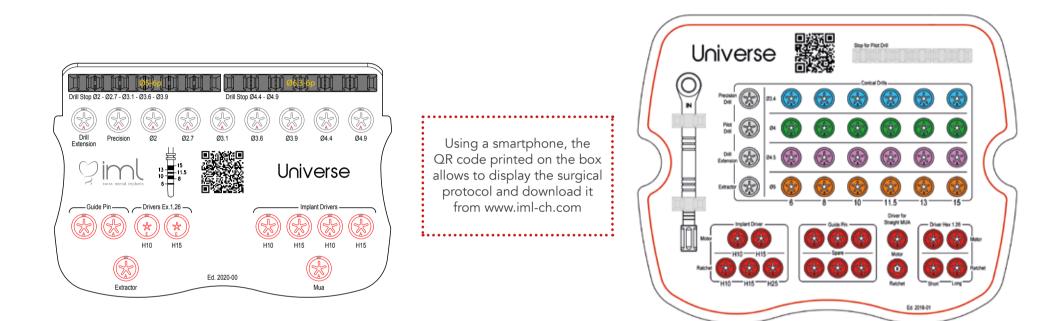
In view of the studies that identify the concentration of mechanical stress in cortical areas as a possible cause of bone resorption (Bibliography page 42, rif. 2), the IML engineers have designed the Universe implant with an internal geometry that makes it possible for the implant-abutment-screw system to behave like a single one-piece implant system. Indeed the Universe implant-abutment-screw connection has a total height up to about 5.5 mm.

The benefit of this is better distribution of the load and the levers, which spread 80% of the force throughout the system instead of only centring them on the cortical area as is frequently the case in other implant systems. (Bibliography page 42, rif. 3)



CD surgical kit

TD surgical kit

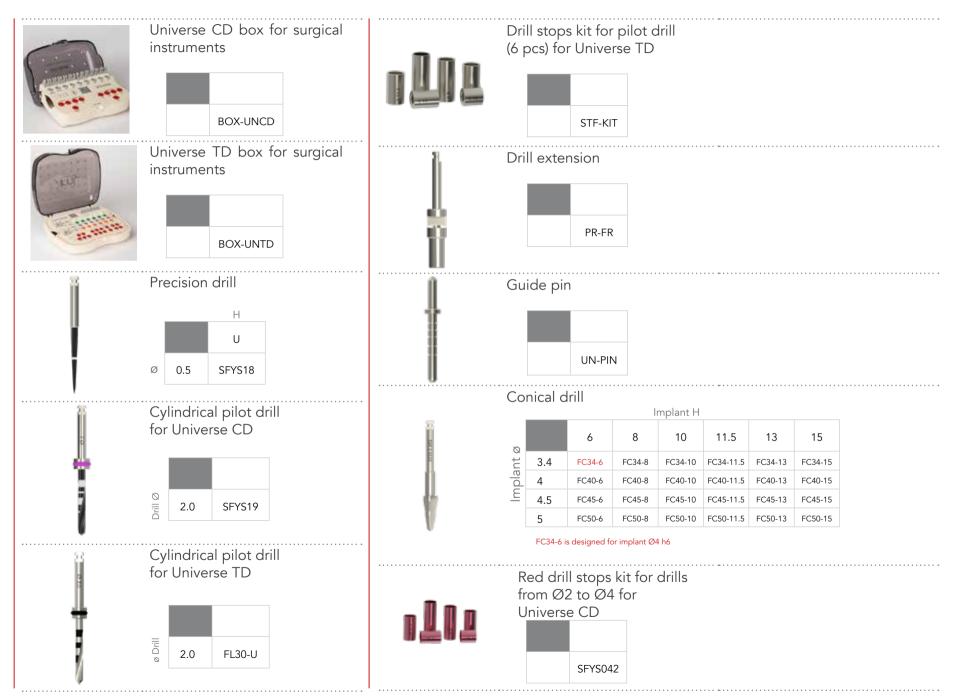


There are two surgical kit of the UNIVERSE implant system: CD (cylindrical drill surgical protocol) and TD (tapered drill surgical protocol). Surgical boxes are designed for maximum simplicility of use and made entirely of plastic materials suitable for steam sterilisation. The instrument positions are clearly labelled in order to facilitate identification during the surgical operation and to correctly replace them after the maintenance procedure. The silicon supports secure the instruments firmly during transportation and sterilisation.

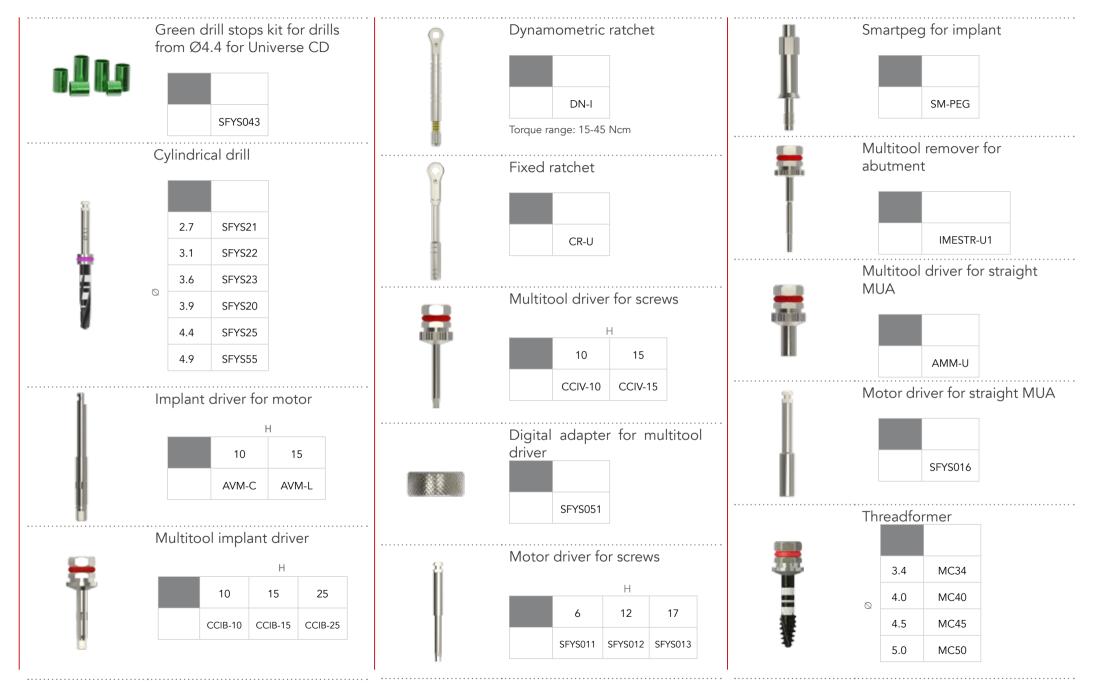
The kit contains stops that allow drills to be used safely and they are suppy separately. Cylindrical drills and pilot drills are marked with indicators referring to implant height and drill stops.

All IML surgical instruments are manufactured in Surgical Steel of the highest quality that offers the best performance in terms of wear resistance and torque. To follow carefully the directions of the surgical and prosthetic protocol and the instructions for cleaning and maintenance of the products ensures the optimal long-term performance and reliability for which products were designed.

Tools



Tools



GUIDED SURGERY

(FINE I







Since 2020 IML becomes official distributor of RealGUIDE Software by 3DIEMME.

Let's see how it works:

In case a patient needs a fixed prosthesis on IML implants, his Dentist must acquire a 3D CBCT (cone beam computed tomography), a digital or conventional impressions copy and his facial esthetics parameters, sharing the data and the treatment plan idea with his Dental Technician through the cloud platform with the 3DIEMME RealGUIDE Software on Windows and Mac operating systems, as well as iPad and iPhone.

Based on the data aquired by the dentist and following the online prescription integrated in the software, the Dental Technician reconstructs a 3D model of the patient's bone and soft tissue on which the ideal virtual position of the teeth is designed. This draft project is then shared through the cloud with the implantologist who, using 3DIEMME RealGUIDE App on his iPad or iPhone, is able to proceed with the virtual positioning of dental implants, then the digital project is shared through the cloud platform with the Dental Technician who proceeds with the digital modeling of the surgical guide and the provisional prosthesis subsequently shared with the Dentist and the Implantologist. The team can discuss the clinical case through the secure chat. If the design is approved, the dental technician produces the surgical guide and the provisional prosthesis with a 3D printer and a CAD-CAM milling machine and delivers them to the implantologist who is ready to perform the surgery in a minimally invasive manner.





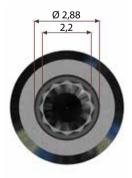
Surgical Planning

UNIT OF MEASUREMENT: mm

H NG MH S S S S S S S S S S S S S S S S S S
MH MPLANTH 8 10 11.5 13 15 7 8
10 11.5 13 15 7 8
11.5 13 15 7 8
13 15 7 8
15 7 8
7 8
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11.5
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С

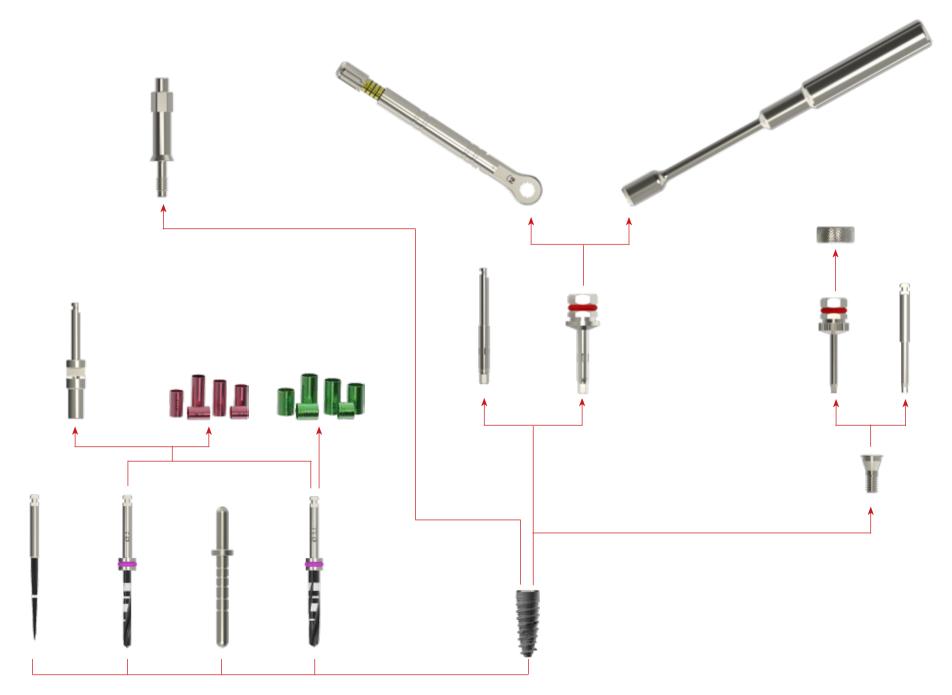
Ε



Cover screw included

OPTIONAL: The cover screw for bone ring can be purchased separately

Preparation (Cylindrical drill surgical protocol)



CD Surgical Protocol

The Universe CD Surgical Protocol has been developed to provide surgeons with indications on how to choose the most suitable instruments for implant site preparation, depending on the type of bone.

However, it is the duty of the surgeon to apply the most appropriate surgical protocol on the basis of his/her experience and following a thorough assessment of the clinical situation of the individual patient.

For the preparation of the implant site, IML has developed cylindrical drills with a tapered tip and depth marks in accordance with the length of the implant; they can be used with drill stops.

In case of dense D1 bone, adequate cortical bone preparation is essential in order to allow the implant to be inserted smoothly in the bone.

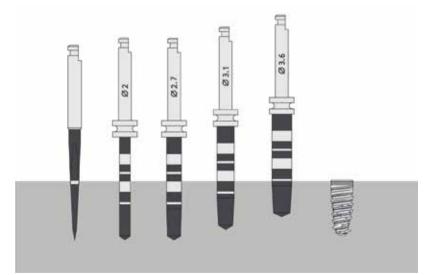


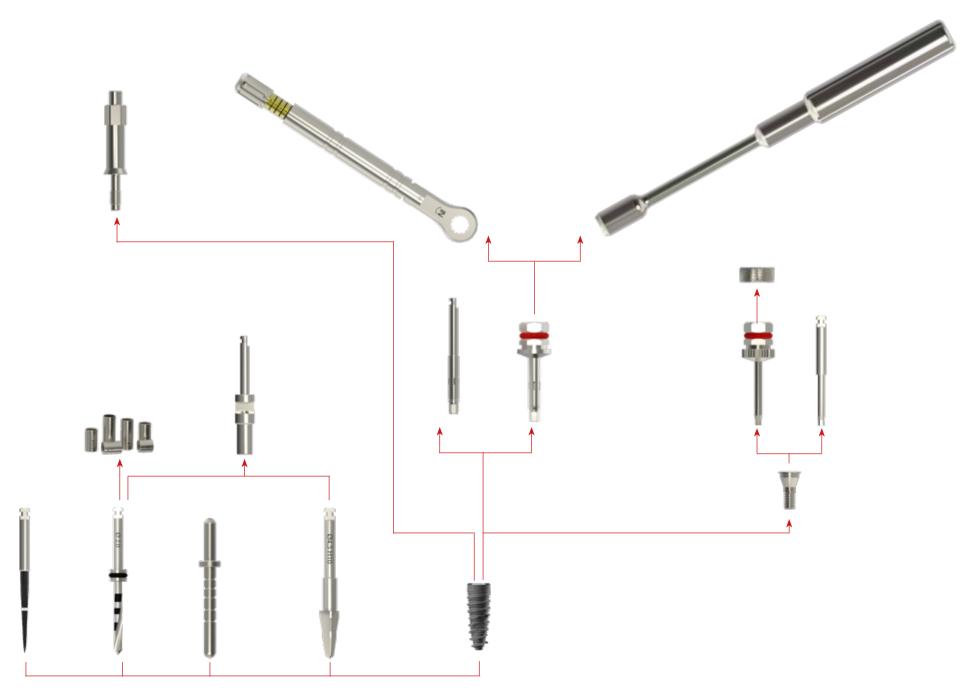
Fig. example of CD drilling sequence in dense bone of implant Ø3.4 h10 **Consult the complete surgical protocol at www.iml-ch.com**

IMPORTANT:

- Drills prepare the site 0.7 mm more than the height of the implant.
- The implant is supplied complete with cover screw
- Recommended torque max: 45 Ncm



Preparation (Tapered drill surgical protocol)



TD Surgical Protocol

The Universe TD Surgical Protocol has been developed to provide the surgeon with the most appropriate tools for bone compliance, and is also simple and practical.

The preparation of the implant site for the Universe implant is completed in 3 simple steps, after which the implant can be inserted easily:

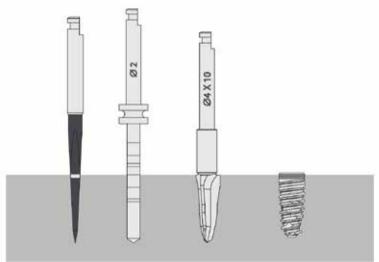


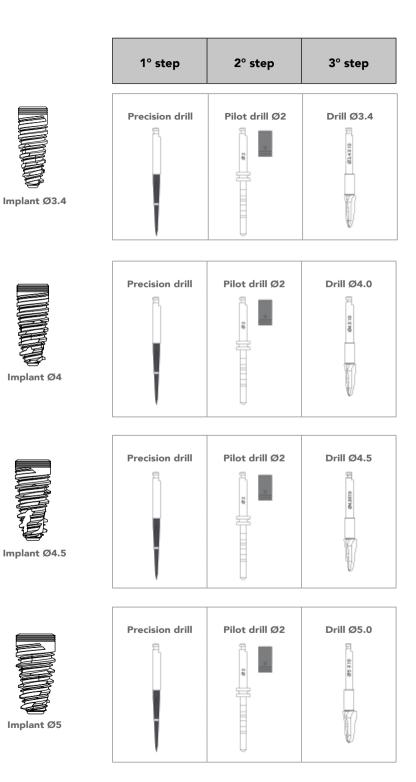
Fig. example of TD drilling sequence of implant Ø4 h10

The preparation of the implant site is performed by tapered drills that optimise the bone available to place the implant, without waste.

These drills are sized at the core of each single diameter and height of the implant to facilitate the drilling protocol reducing it to three simple steps. The particular tip shape guides the progressive advancement, respecting the bone and preparing a customized site. However, it is the duty of the surgeon to choose the most appropriate surgical protocol based on his or her experience following a thorough assessment of the individual patient's clinical situation.

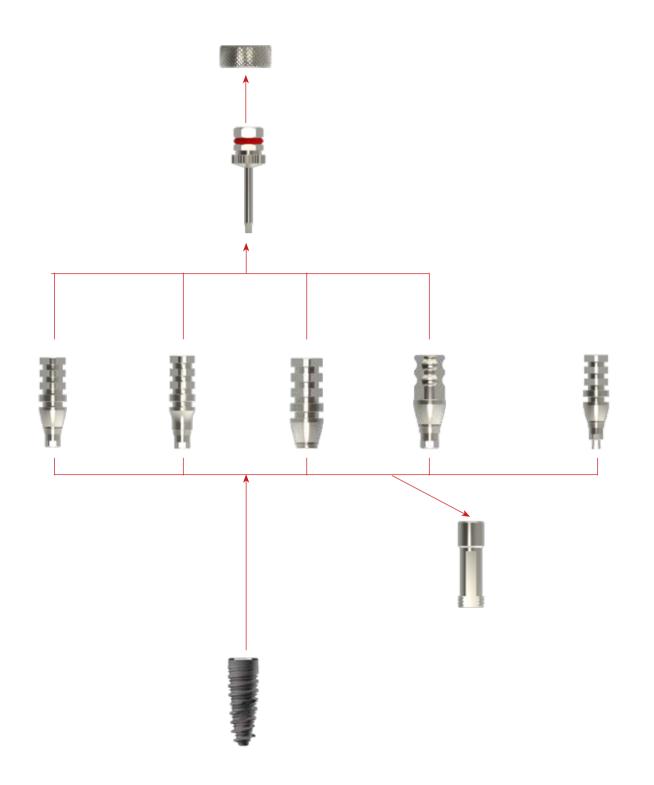
IMPORTANT:

- Drills prepare the site 0.3 mm more than the height of the implant.
- The implant is supplied complete with cover screw
- Recommended torque max: 45 Ncm

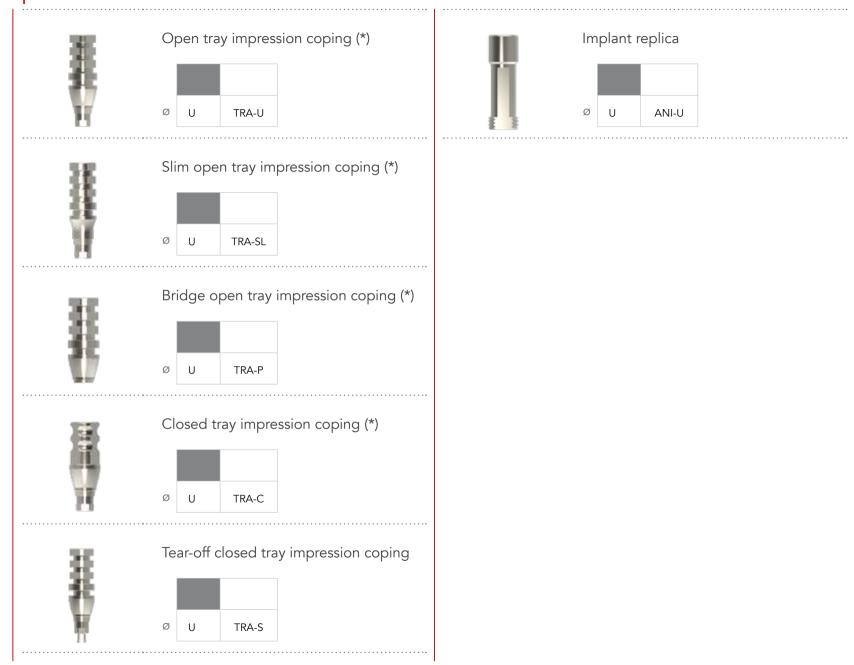


PROSTHETIC PLANNING

Impression taking

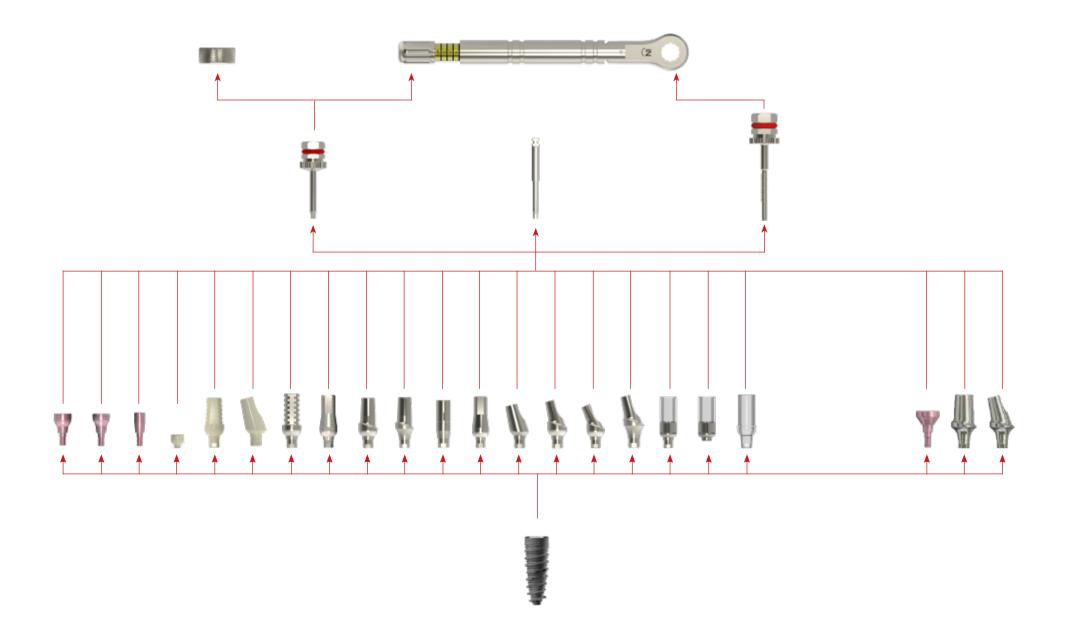


Lab components

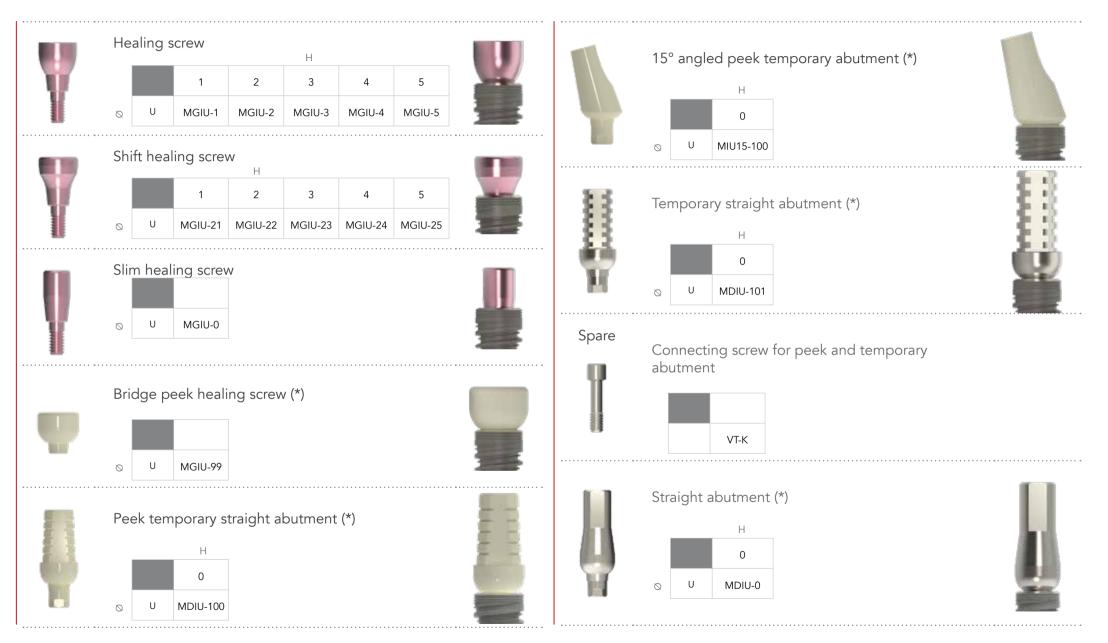




Restoration



Prosthetic parts

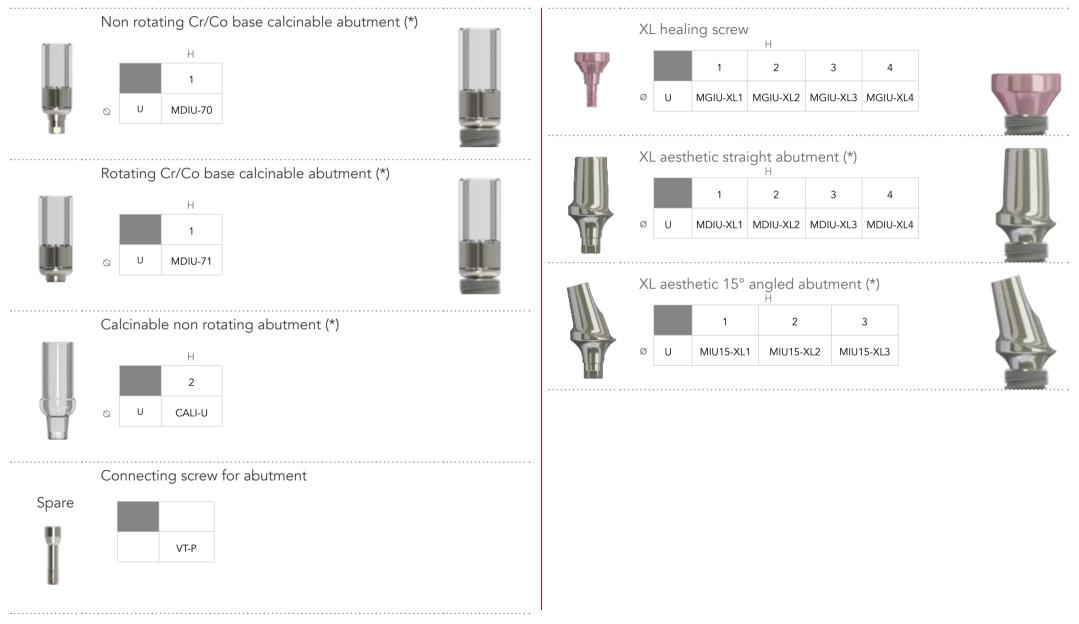


Prosthetic parts



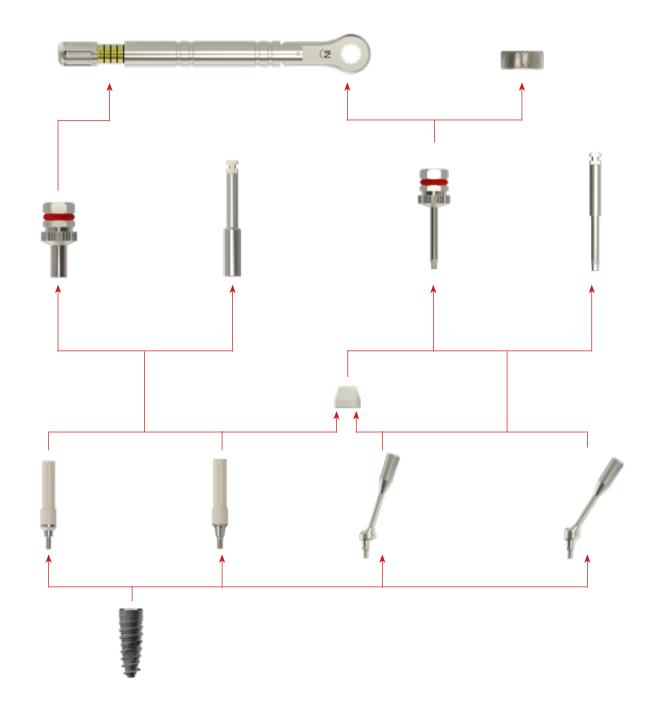
Prosthetic parts

XL prosthetic parts

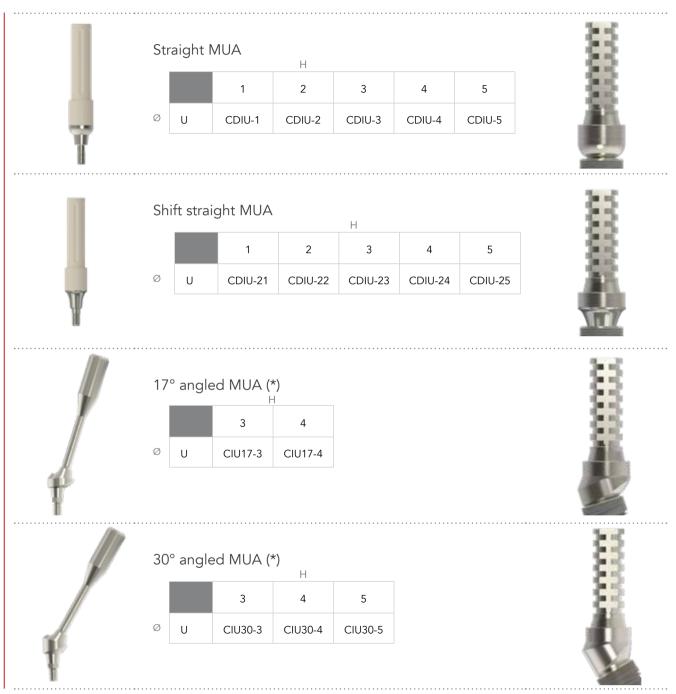


(*) Connection screw included.

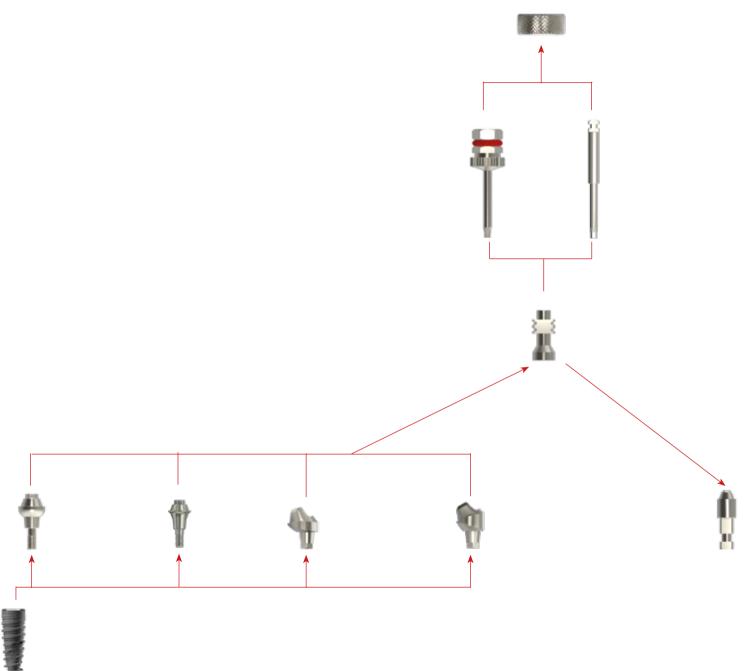
MUA positioning



MUA

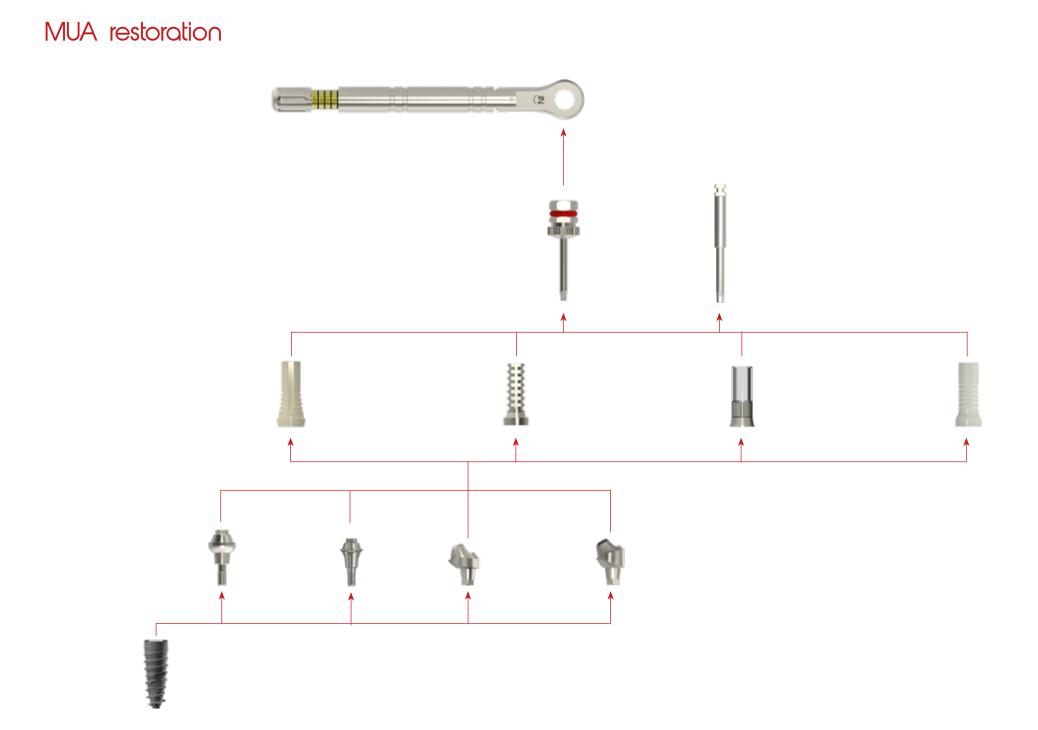


MUA impression taking



MUA lab components

	MUA open tray impression coping (*)
	OPTIONAL: Long screw for MUA impression coping H 20 SFYV011
Î	MUA replica

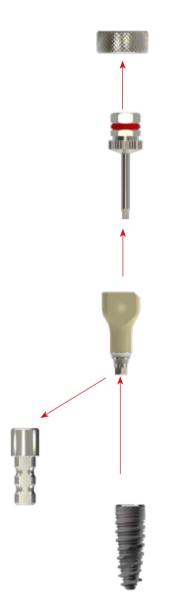


MUA prosthetic parts

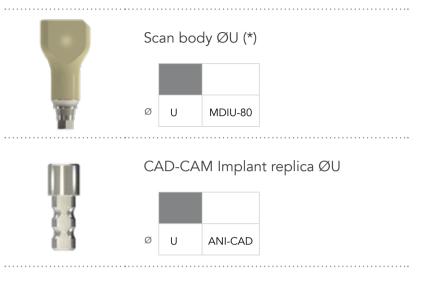




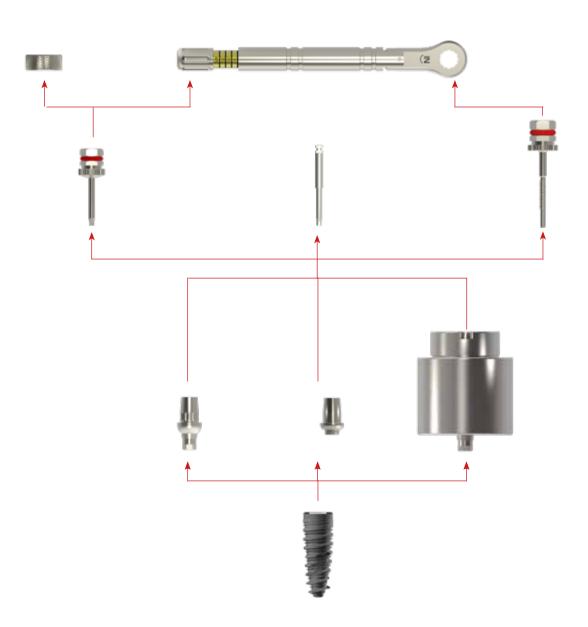
CAD-CAM impression taking



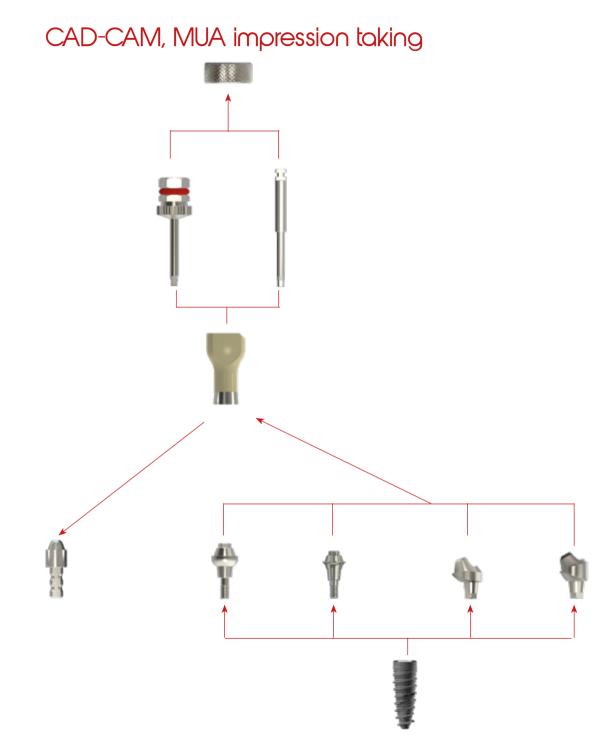
CAD-CAM lab components



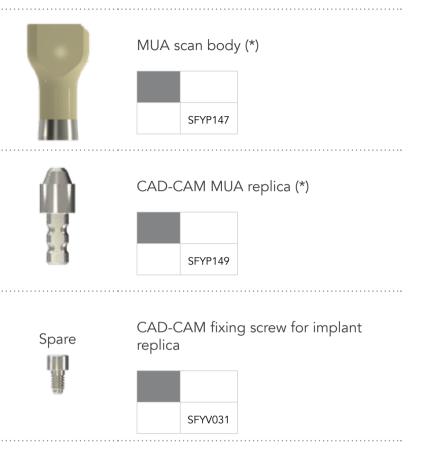




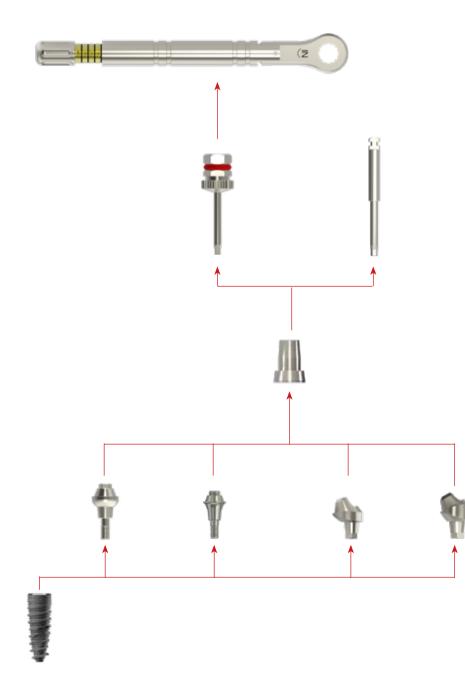




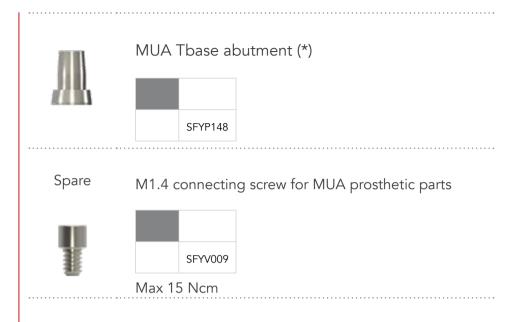
CAD-CAM, MUA lab components



CAD-CAM, MUA restoration



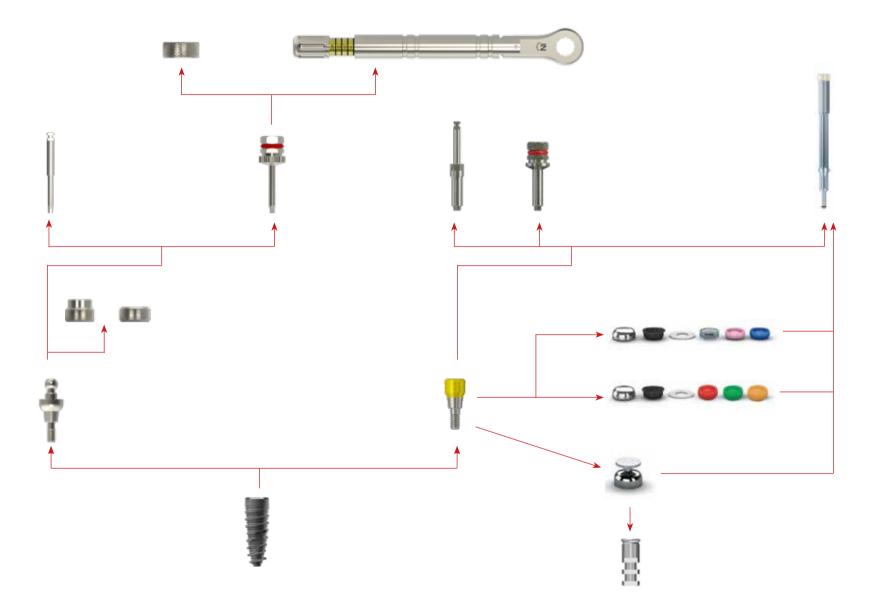
CAD-CAM, MUA prosthetic parts



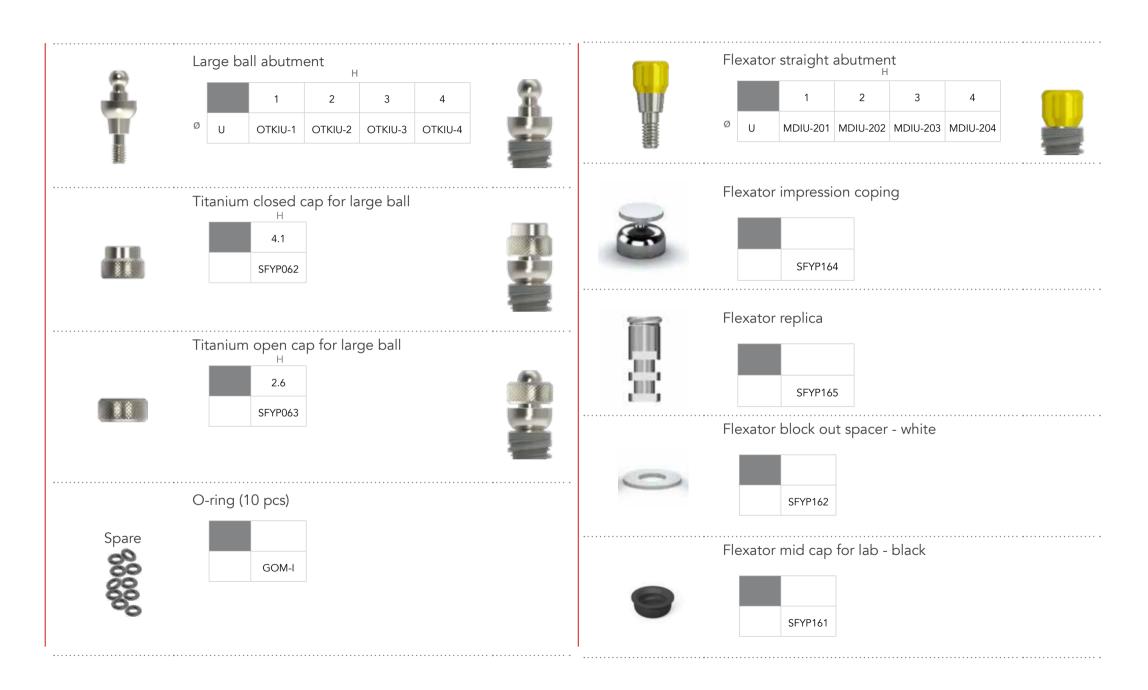
OVERDENTURE SOLUTIONS



Overdenture solutions



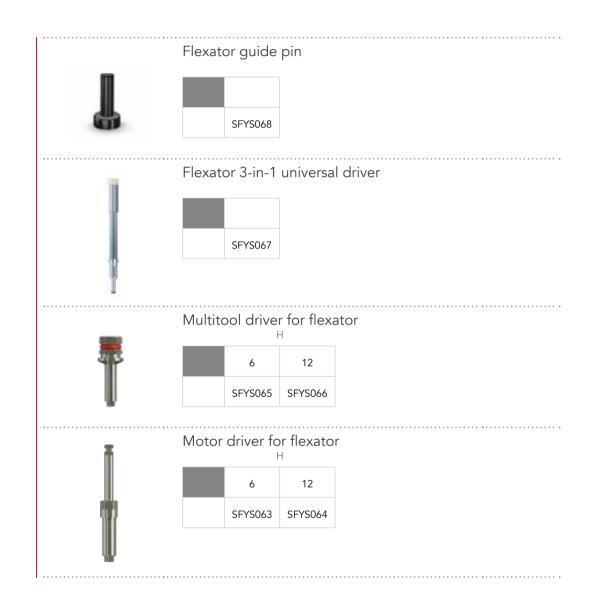
Overdenture prosthetic parts, lab components



Overdenture prosthetic parts, lab components



Flexator tools



PACKAGING



Packaging

IML's packaging process is performed in compliance with the standards set by the EC 93/42 Directive, which guarantee the sterilisation shelf-life. The IML implants are sterilised by beta rays.

The implants are packaged in a ABS container that, in turn, is placed inside a plastic container safety seal cap. Then the plastic container is placed inside a cardboard box bearing a removable label, bearing the implant information details. Further two copies of the label are into the cardboard box, to be placed on the implant passport and on the patient's medical record sheet.



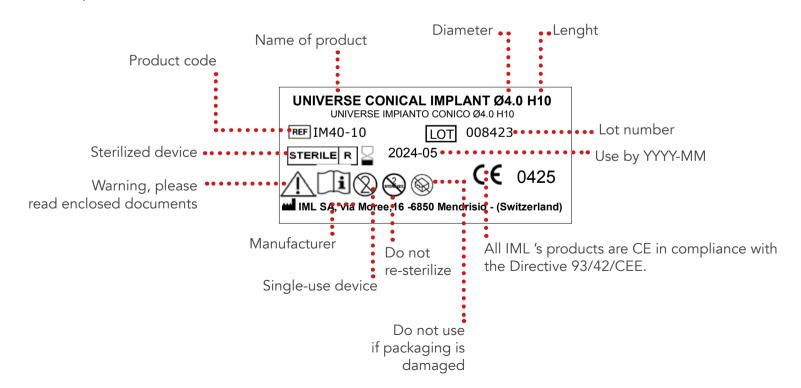
Grey ABS implant system stopper and red ABS cover screw stopper are carefully washed and dried. The dental implant is contained in titanium spacers.



The transparent grey fumè Polypropylene (PP) container is closed with a white Polypropylene (PP) stopper with a safety seal.



The cardboard box $(3.5 \times 6.2 \times 3.5 \text{ cm})$ must be stored in a dry place at room temperature.



ABOUT US

The Swiss company IML SA Swiss Dental Implants was founded in 2009 by a closeknit team of professionals with twenty-year experience in the dental industry, especially dealing with implants.

Its engineers continuously strive to find effective solutions for new implantology needs, ones that meet the expectations of the most demanding professionals.

Main aim: to offer oral implantology that is Simple, Safe and Stable through time.

These "3Ss" summarise the guidelines the Company has established for its own standards and are pursued in every action it takes every day.

Men, materials and machines

Only the best raw materials, the most advanced technology, and the best professional.

These secrets of IML guarantee excellent products, free from manufacturing defects.

Super-skilled operators able to develop a man-machine relationship able to optimise the features of their tools to achieve maximum performance
Top quality titanium for medical use. grade 4 for implants and grade 5 for prostheses. IML titanium is exclusively imported from the United States, is guaranteed free from manufacturing defects and radioactivity
Mechanical production using latest generation sliding head machines

Mechanical excellence

How important is it for the mechanical work in the connection of an implant or in the head of a screw to be well-executed?

Just as important as it is that the abutment remains well screwed to the implant.

IML is fully aware of the issues generated by all types of production defects and knows how to resolve them, and above all, it knows how to obtain, and systematically repeat, a PERFECT MECHANICAL EXECUTION. For example, IML guarantees 5 thousandths of a millimeter tolerance on the measure of the hexagonal connection of the implent, on every single implant.



Quality checks

Control of quality or quality control? A play on words, useful in explaining that checking is not enough for IML.

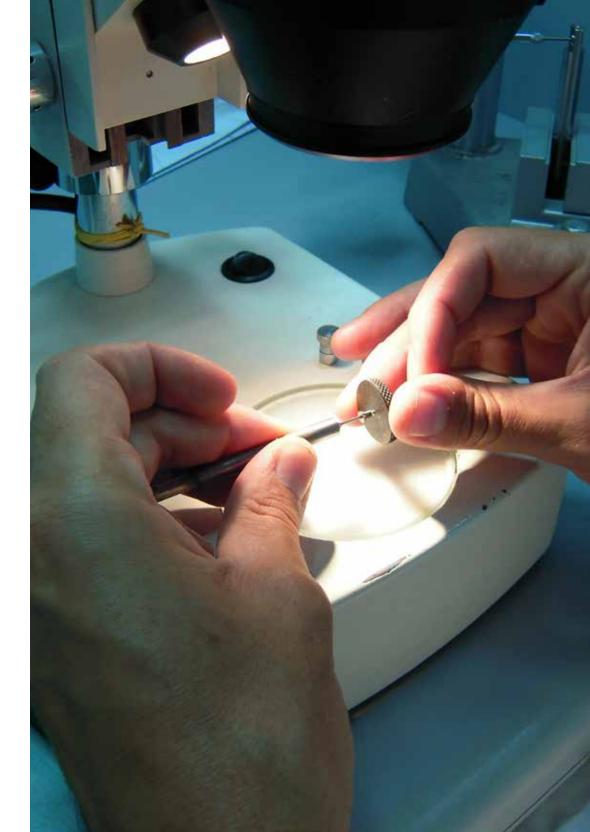
Control in IML is synonymous with uncompromising elimination of all those components that present the slightest imperfection even if only aesthetic.

It means making a commitment to selling only very specific components in order to be "as precise as the Swiss".

It means that we must fully take on the cost of this commitment both pursued and maintained ethically and proudly by IML and by taking the patient's health and the surgeon's skills into consideration.

Process:

- Identification of each individual component's critical points
- Drafting documents with a list of the critical points specific to each individual component indicating the sequence of checks to be carried out
- Over 30 checks are performed on 100% of the components manufactured in the various manufacturing phases:
- Dimensional controls
- Removal of burrs and dross
- Functional tests to remove non-perfect components are performed on 100% of the components
- The operator signs off each check to certify that he or she accepts responsibility for the checks made
- Regular laboratory analyses check conformity of implant surfaces



General sale terms

VALIDITY

This catalogue is the 2019_1 edition and replaces any previous editions.

EXCLUSION OF RESPONSIBILITY

The dental implants manufactured by IML SA (hereinafter also "IML") and other IML medical devices may be used only with original IML components and instruments, following the instructions provided inside the package. The use of devices manufactured by other companies or manufactured by IML, but not belonging to the same implant line shall invalidate the warranty and terminate any explicit or implicit obligation of IML.

The clinical protocols provide the practitioner with a reference guide and shall not be construed as an alternative to the user's training and professional experience.

The practitioner using IML medical devices must ensure that device being used is suited to the patient and to existing circumstances. IML does not acknowledge any explicit or implicit responsibility, nor shall it have any responsibility for any direct, indirect, criminal or other damage deriving from or associated with any mistakes in professional judgements, in the practical application or insertion of IML products. The practitioner is also under the obligation to keep up-to-date at all times with the most recent developments and applications of IML medical devices.

Any descriptions of the products, depictions, illustrations in catalogues, illustrative and sales materials, price lists or other informative documents issued and distributed by IML in any form are provided only for explicative purposes. The Purchaser acknowledges that he/she does not purchase the products on the basis of such descriptions and/or illustrations.

PRODUCTS MODIFICATIONS

The images of the products shown in the catalogues, and in all IML publications, are for illustrative purposes only. IML reserves the right, at any time and at its sole discretion, to make changes to the products, codes and descriptions without obligation of notice.

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ORDER PLACEMENT

IML dental implants and medical devices can be ordered by quoting the product code and desired quantity, in the following ways:

Telephone: 0041 (0) 916001310 Mon - Fri 09:00-13:00 / 14:00-17:00, E-mail: info@immediateload.com

PRODUCT SHIPMENTS

Except in the event of force majeure, goods will be shipped to the address indicated by the client according to the terms indicated by the supplier at the time of acceptance of the order.

RETURNED MATERIALS

The right to have purchased products replaced may be exercised within 5 working days from the products delivery date and must be pre-authorised by IML in writing. The right to replacement shall be cancelled in the event the product integrity (packaging and/or its content) is compromised. For example in the cases in which IML observes:

- that the package has been opened
- that the package has been damaged (even if still sealed)
- that the product has been damaged other than for transportation.

If IML does not accept to replace the product, it will return it, charging shipment costs to the Purchaser.

PRICES

The values indicated in the offi cial price list are net of VAT, transport costs and any bank charges for payment collection. Unless previously agreed otherwise, prices charged will be the ones indicated in the offi cial price list in force at the time of the order acceptance.

CHANGES TO THE PRODUCTS AND PRICES

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APPLICABLE LAW AND JURISDICTION

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Scientific bibliography

Connessione Conometrica Morse-taper connection

- Di Carlo F, Marincola M, Quaranta A, Bedini R, Pecci R (2008) Analisi MicroTac di impianti a connessione conometrica. DentCadmos76(3):1-6.
- Bedini R, loppolo P, Pecci R, Rizzo F, Di Carlo F, Quaranta M (2007) Studio in vitro sulla connessione di sistemi implantari dentali. Rapporti ISTISAN 07/7.
- Hermann JS, Schoolfield JD, Schenk RK, Buser D, Cochran DL (2001) Influence of the size of the microgap on crestal bone changes around titanium implants. A histometric evaluation of unloaded non-submerged implants in the canine mandible. J Periodontol 72:1372-1383.
- Crespi R, Cappare P, Gherlone E. Radiographic evaluation of marginal bone levels around platform-switched and non-platform-switched implants used in an immediate loading protocol. Int J Oral Maxillofac Implants 2009.
- Dibart S, Warbington M, Su MF, Skobe Z (2005) In vitro evaluation of the implant-abutment bacterial seal: the locking taper system. Int J Oral Maxillofac Implants 20:732-737.
- Persson LG, Leckholm U, Leonhardt A, Dahlen G, Lindhe J (1996) Bacterial colonization on internal surfaces of Branemark system implant components. Clin Oral Implants Res 7:90-95.
- Hansson S. Implant-Abutment Interface: Biomechanical study of Flat Top versus Conical. 2000: Biomechanics, department of polymeric materials, Chalmers University of Technology Goteborg, Sweden.
- Dibart S. et al. In vitro evaluation for the implant-abutment bacterial seal: The locking Taper system. Int. J. Oral Maxillo-facial Implants. 2005; 20: 732-737.

Riassorbimento osseo Bone reabsorbtion

- Horowitz, R., Current Implant Designs to Maintain Crestal Bone and Gingiva, Functional Esthetics & Restorative Dentistry: Series 1, Number 2, Dental Implants, p. 88-90, 2008.
- Kitamura E, Stegaroiu R, Nomura S, Miyakawa O. Influence of marginal bone resorption on stress around an implant—A three-dimensional finite element analysis. J Oral Rehabil 2005; 32:279–286.
- King GN, Hermann JS, Schoolfield JD, Buser D, Cochran DL. Influence of the size of the microgap on crestal bone levels in non-submerged dental implants: a radiographic study in the canine mandible. J Periodontol. 2002;73(10):1111-7.
- Tawil G, Aboujaoude N, Youman R. Influence of prosthetic parameters on the survival and complication rates of short implants. Int J Oral Maxillofac implants 2006; 21(2): 275-282. 5) Leonard, G., Coelho, P., Polyzois, I., Stassen, L., Claffey, N., A study of the bone healing kinetics of plateau versus screw root design
- titanium dental implants. Clinical Oral Implants Research, 2009, 20 (3), 232-239.
- Tada S, Stegaroiu R, Kitamura E, Miyakawa O, Kusakari H. Influence of implant design and bone quality on stress/strain distribution in bone around implants: A 3-dimensional finite element analysis. Int J Oral Maxillofac Implants 2003; 18:357–368.
- Bozkaya, D., and Müftü, S., Muftu, Á., Evaluation of Load Transfer Characteristics of Five Different Implant Systems in Compact Bone at Different Load Levels by Finite Element Analysis. Journal of Prosthetic Dentistry, Vol. 92 No.6, p.523-530, December 2004.
- Bidez MW, Misch CE. Issues in bone mechanics related to oral implants. Implant Dent 1992; 1(4): 289-294. 9) Petrie CS, Williams JL. Shape optimization of dental implant designs under oblique loading using the p-version finite element method. J Mechanics Med Biol 2002;2: 339–345.
 Lemons, J.E., Biomaterials, Biomachanics, Tissue Healing, and Immediate-Function Dental Implants, Journal of Oral Implantology, Vol. XXX No. 5, 2004.
- Venuleo, C., Chuang, S.K., Weed, M., Dibart, S., Long term bone level stability on Short Implants: A radiographic follow up study. Indian Journal of Maxillofacial and Oral Surgery, September 2008, Vol. 7: No.3, p. 340-345.
- Mericske-Stern R, Grutter L, Rosch R, et al: Clinical evaluation and prosthetic complications of single tooth replacements by non-submerged implants. Clinical Oral Implants Res 2001; 12: 309-318.
- Dibart S, Warbington M, Fan Su M, et al: In vitro evaluation of the implant-abutment bacterial seal: the Locking Taper system. Int J Oral Maxillofacial Implants 2005; 20: 732-737.
- Li Shi, Alex S. L. Fox. Shape Optimization of Dental Implants. I.Int J Oral Maxillofac Implants. 22:911-920; 2007. 15) Renouard F, Nisand D, Impact of implant length and diameter on survival rates. Clinical Oral Implants Res. 2006 Oct;17 Suppl 2:35-51.
- Schulte, J., Flores, A., Weed, M., Crown-to-implant ratios of single tooth implant-supported restorations, Journal of Prosthetic Dentistry, Vol 98, Issue 1, July 2007, Pages 1 UNI EN 1642. Dispositivi medici per l'odontoiatria. Impianti dentali. Milano: Ente Nazionale Italiano di Unificazione; 1997. ISO TR 11175. Dental implants. Guidelines for de-velopment dental implants. Geneva: International Organization for Standardization; 1993.
- Brunski JB. Biomaterials and biomechanics in den-tal implant design. Int J Oral Maxillofac Implants 1988; 3(2): 85-97.
- Lekholm U, Zarb GA. Tissue integrated prostheses: osseointegration in clinical dentistry. Chicago: Br-anemark, Zarb & Albrektsson Eds.; 1985.
- Albrektsson T, Bränemark PI, Hansson HA, Lind-strom J. Osseointegrated titanium implants. Re-quirements for ensuring a long lasting, direct bone anchorage in man. Acta Orthop Scand 1981; 52(2): 155-70.
- Adell R, Lekholm U, Rockler B, Bränemark PI. A 15- year study of osseointegrated implants in the treatment of the edentulous jaw. Int J Oral Surg 1981; 10(6): 387-416.
- Bränemark PI, Adell R, Breine U, Hansson BO, Lind-strom J, Ohlsson A. Intra-osseous anchorage of dental prostheses I. Experimental studies. Scand J Plast Reconstr Surg 1969; 3: 81-100.
- Asikainen P, Klemetti E, Vuillemin T, Sutter F, Rainio V, Kotilainen R. Titanium implants and lateral forc-ves. An experimental study with sheep. Clin Oral Implants Res 1997; 8(6): 465-468.
- Keltjens HMAM, Creugers TJ, Creugers NHJ. Three different filling materials in overdenture abut¬ments; a 30-months evaluation. J Dent Res 1997; 76(5):1103.
- Weinlaender M. Bone growth around dental im-plants. Dent Clin North Am 1991; 35: 585-601
- M. Marincola, L. Paracchini, V. Morgan, J. Schulte. Impianti corti: principi biomeccanici e predicibil-ità a lungo termine. Quintessenza Internazionale 2008, Settembre-Ottobre 2008, 45-53, 24, 5bis.
- M. Danza, I. Zollino, L. Paracchini, G. Riccardo, S. Fanali, F. Carinci. 3D finite element analysis to dentect stress distribution: Spiral family implants. J. Maxillofac. Oral Surg 8(4): 334-339.

Carichi e leve Loading and leverage

- Brunski JB. Biomaterials and biomechanics in dental implant design. Int J Oral Maxillofac Implants. 1988;3(2):85–97.
- Albrektsson T, Bränemark PI, Hansson HA, Lindstrom J. Osseointegrated titanium implants. Requirements for ensuring a long lasting, direct bone anchorage in man. Acta Orthop Scand. 1981;52(2):155–70.
- Adell R, Lekholm U, Rockler B, Bränemark PI. A 15-year study of osseointegrated implants in the treatment of the edentulous jaw. Int J Oral Surg. 1981;10(6):387–416.
- Bränemark PI, Adell R, Breine U, Hansson BO, Lindstrom J, Ohlsson A. Intra-osseous anchorage of dental prostheses I. Experimental studies. Scand J Plast Reconstr Surg. 1969;3:81–100.
- Asikainen P, Klemetti E, Vuillemin T, Sutter F, Rainio V, Kotilainen R. Titanium implants and lateral forces. An experimental study with sheep. Clin Oral Implants Res. 1997;8(6):465-468.
- Keltjens HMAM, Creugers TJ, Creugers NHJ. Three different filling materials in overdenture abutments; a 30-months evaluation. J Dent Res. 1997;76(5):1103.
- Danza M, Zollino I, Paracchini L, Riccardo G, Fanali S, Carinci F. 3D finite element analysis to detect stress distribution: Spiral family implants. J Maxillofac Oral Surg. 8(4):334–339.
- Danza M, Zollino I, Paracchini L, Vozza I, Guidi R, Carinci F. 3D finite element analysis comparing standard and reverse conical neck implants: Bone platform switching. EDI Journal. 2010;2:334–339.
- Danza M, Quaranta A, Carinci F, Paracchini L, Pompa G, Vozza I. Biomechanical evaluation of dental implants in D1 and D4 bone by Finite Element Analysis. Minerva Stomatol. 2010;59(6):305–13.
- Danza M, Paracchini L, Carinci F. Analisi agli elementi finiti per la definizione della distribuzione degli stress meccanici negli impianti. Dental Cadmos. 2012;80(10):598-602.
- Marrelli M, Maletta C, Inchingolo F, Alfano M, Tatullo M. Three-point bending tests of zirconia core/veneer ceramics for dental restorations. Int J Dent. 2013;2013:831976. doi:10.1155/2013/831976.
- Inchingolo F, Tatullo M, Abenavoli FM, Marrelli M, Inchingolo AD, Palladino A, Inchingolo AM, Dipalma G. Oral piercing and oral diseases: a short time retrospective study. Int J Med Sci. 2011;8(8):649–52.

• Paduano F, Marrelli M, White LJ, Shakesheff KM, Tatullo M. Odontogenic Differentiation of Human Dental Pulp Stem Cells on Hydrogel Scaffolds Derived from Decellularized Bone Extracellular Matrix and Collagen Type I. PLoS One. 2016 Feb 16;11(2):e0148225. doi:10.1371/journal.pone.0148225.

• Marrelli M, Falisi G, Apicella A, Apicella D, Amantea M, Cielo A, Bonanome L, Palmieri F, Santacroce L, Giannini S, Di Fabrizio E, Rastelli C, Gargari M, Cuda G, Paduano F, Tatullo M. Behaviour of dental pulp stem cells on different types of innovative mesoporous and nanoporous silicon scaffolds with different functionalizations of the surfaces. J Biol Regul Homeost Agents. 2015 Oct–Dec;29(4):991–7.

• Tatullo M, Marrelli M, Falisi G, Rastelli C, Palmieri F, Gargari M, Zavan B, Paduano F, Benagiano V. Mechanical influence of tissue culture plates and extracellular matrix on mesenchymal stem cell behavior: A topical review. Int J Immunopathol Pharmacol. 2016 Mar;29(1):3–8. doi:10.1177/0394632015617951 Review.

• Inchingolo F, Tatullo M, Marrelli M, Inchingolo AM, Inchingolo AD, Dipalma G, Flace P, Girolamo F, Tarullo A, Laino L, Sabatini R, Abbinante A, Cagiano R. Regenerative surgery performed with platelet-rich plasma used in sinus lift elevation before dental implant surgery: an useful aid in healing and regeneration of bone tissue. Eur Rev Med Pharmacol Sci. 2012 Sep;16(9):1222–6.

Marrelli M, Tatullo M. Influence of PRF in the healing of bone and gingival tissues. Clinical and histological evaluations. Eur Rev Med Pharmacol Sci. 2013 Jul;17(14):1958-62.

• Inchingolo F, Tatullo M, Pacifici A, Gargari M, Inchingolo AD, Inchingolo AM, Dipalma G, Marrelli M, Abenavoli FM, Pacifici L. Use of dermal-fat grafts in the post-oncological reconstructive surgery of atrophies in the zygomatic region: clinical evaluations in the patients undergone to previous radiation therapy. Head Face Med. 2012 Dec 5;8:33. doi:10.1186/1746-160X-8-33. Review. Gargari M, Prete V, Pujia A, Ceruso FM. Full-arch maxillary rehabilitation fixed on 6 implants. Oral Implantol (Rome). 2013 Jul 15;6(1):1-4.

- Carinci F, Brunelli G, Franco M, Viscioni A, Rigo L, Guidi R, Strohmenger L. A retrospective study on 287 implants installed in resorbed maxillae grafted with fresh frozen allogenous bone. Clin Implant Dent Relat Res. 2010 Jun 1;12(2):91–8.
- Scarano A, Murmura G, Carinci F, Lauritano D. Immediately loaded small-diameter dental implants: Evaluation of retention, stability and comfort for the edentulous patient. European Journal of Inflammation. 2012;10(1):19–23.
- Fanali S, Carinci F, Zollino I, Brugnati C, Lauritano D. One-piece implants installed in restored mandible: A retrospective study. European Journal of Inflammation. 2012;10(1):37-41.

• Andreasi Bassi M, Andrisani C, Lico S, Ormanier Z, Ottria L, Gargari M. Guided bone regeneration via a preformed titanium foil: Clinical, histological and histomorphometric outcome of a case series. Oral Implantol (Rome). 2016 Oct-Dec;9(4):164–174.



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