

# Vulkan<sup>®</sup> Internal Hex. Implant System



#### **AVAILABLE IMPLANT SYSTEMS**









# Index

# Vulkan® Internal Hex. Implant System

	Vulkan® Internal Hex. Implant	
	Implant Design and Properties	4-5
	VLA® Surface Treatment and Plasma Cleaning	6
	Sizes Guide	
	Technical Specification	
	Surgical Protocol	
	Implant Driver and Packaging	
	Step-by-Step Implant Placement	
	Vulkan® Internal Hex. Prosthetic Solutions and Tools	10 11
	Introduction	16
	Main Components	
	Transepithelial Multi-Use® System	
	Vulkan® Tissue Care	
	Overdenture VulkanLoc® System	
	CAD-CAM Components	
	Surgical and Prosthetic Tools ———————————————————————————————————	24-25
	How we work	
	Innovation, Precision and Quality	
	Clinical Cases	27
學		
		L.

# Designed and made in Barcelona, one of the most advanced cities in the world in biotechnology





#### About us

Vulkan® is a modern, cutting-edge European dental implant brand, established in Barcelona (Spain) in 2013.

Vulkan® was born out of our long and recognized expertise in the field of dental implantology. Also, because of our links with highly regarded companies and professionals in the sector and our close ties with the strong and world-renowned local biotechnological network.

As a manufacturer of implants and dental prosthetic solutions, our added value is based on the **high quality and reliability** of our processes and products. As well as the innovative capacity of our team of scientists, engineers and dental professionals.

In Vulkan® we carefully monitor and control all our processes of R+D+i, design, production and quality to be able to guarantee 100% the success of our products.

Our mission is to improve and facilitate the experience of the patients and dental health professionals by designing, manufacturing and making more accessible the most up-to-date dental implant technology.

#### Innovation:

The constant improvement and the desire to find the best solutions for the patients place us as an innovative and reliable company.

#### Quality:

Quality and seeking perfection are golden rules for everything we do.

#### Commitment:

Our commitment with the patients: solutions that improve their quality of life.

Our commitment with the industry professionals: innovations to improve their clinical experience.

#### Added value:

The engine that moves us forward is the motivation to always offer more and better solutions.

#### Sustainability:

For us sustainability is a core value in our decision making process, to enable our values and our brand to last over time.

# Vulkan® Internal Hex., the most innovative design with the latest technology in each area of the implant

# Polished coronal region

Polished and beveled surface of 0.5 mm.

Aids the **proper healing** of the perimplantary mucogingival tissue, promoting the **hygiene** in the supracrestal area.

Hinders the adhesion of bacterial plaque.

Diminishes the risk of perimplantitis.

#### Micro-slot in cortical area

High primary stability at the cortical level.

Suitable for immediate loading treatments with bone types III and IV.

Decrease of occlusal loading stress.

Reduces the risk of cortical bone resorption.

#### Double thread

High advance of 1.8 mm per revolution.

Easy insertion.

Precise conicity to enable **gradual** condensation of the bone, **facilitating primary stability**.

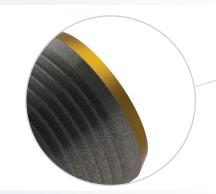
# **Cutting notches**

#### Self-tapping.

**Optimal channeling** of the detached tissue during implantation.

Anti-rotational function after osseointegration.

**Reduce** excessive pressure on the alveolar bone during insertion.











# Internal hexagon connection of high fit



Absence of micromovements (minimum GAP).

Optimum sealing. Only 5 µm tolerance in manufacturing.

Effective occlusal loading distribution.

High resistance to torsional loading.

High fit accuracy of dental attachments.

**Uniform platform** suitable for all diameters.

Simplicity in the process.

# Trapezoidal thread profile



Optimal load distribution.

Facilitates **self-tapping** function.

Extensive bone contact surface.

# Atraumatic tapered apex



Facilitates self-tapping to improve maneuverability.

Blunt tip **minimizes the risk of injuring** anatomical structures.

Simulates the natural tooth root.

# VLA® Surface treatment

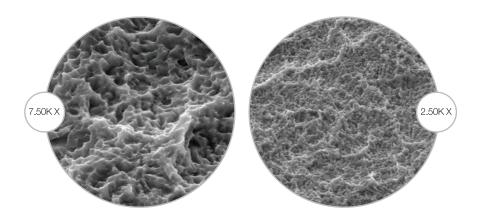


#### Proven Guarantee of Success

The Vulkan® IN·HEX implant has been subjected to a treatment consisting of sandblasting + double acid etching creating a surface with optimum roughness of 1.4  $\mu$ m.

This is a widely studied surface that provides a microstructure that stimulates the osseointegration of the implant.

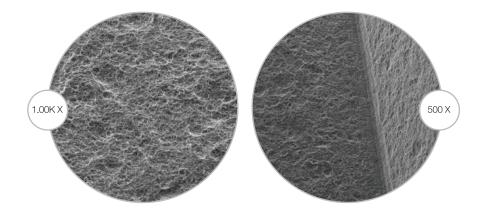
The VLA® surface treatment presents success rates of 98%-99%. This microstructure also ensures a large contact area between implant and bone, providing the maximum BIC (Bone Implant Contact).



# The Cleanest Implant

In addition, an **innovative final cleaning technique** is applied using a **plasma** cleaning system that strikes the surface of the implant, subjecting it to an intensive blasting causing the detachment and **complete elimination of any possible remaining contaminants**.

Finally, the implant is subjected to a strict sterilization by gamma rays.



# Vulkan® Internal Hex.,

the cutting-edge implant that meets all your needs





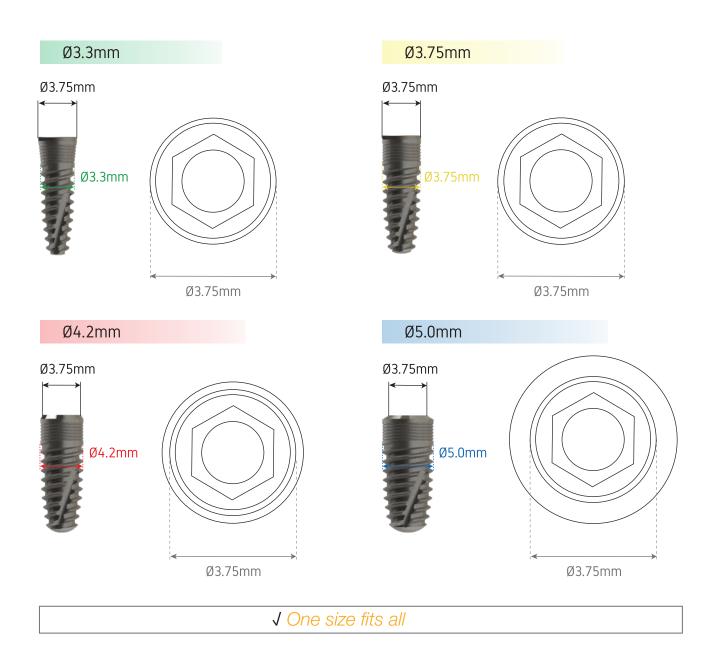
#### Sizes Guide



# Technical specifications

# Vulkan® Internal Hex.

# One Prosthetic Platform for All Implant Diameters





# Technical specifications

Vulkan® Internal Hex.

# The best titanium for the most advanced implant

In general, scientifically-proven dental implants are made of Titanium Grade 4. This material is known for providing better biocompatibility than Titanium Grade 5, because it has more pure titanium. However, although Titanium Grade 5 is less biocompatible, it has superior mechanical properties than Titanium Grade 4. This is the reason why Titanium Grade 5 is most commonly used in prosthetic components and Titanium Grade 4 in implants.

The determining factor in choosing between one material or another is their biocompatibility. However, it is also very important that the material contains mechanical properties that provide tensile/shear resistance, elasticity and enough strength/hardness to withstand the prosthetic process satisfactorily. That is why, in Vulkan we use an innovative material that provides the same biocompatibility than Titanium Grade 4 and the same mechanical properties than Titanium Grade 5.

#### How do we manage to obtain the best of both materials in one?

Technically, the composition of our Titanium is Grade 4. However, when forming it we use a "Cold Forming" technique. This process to form the material is what provides our implants their superior mechanical properties.

Using this innovative technique, we manage to produce our implants for maximum biocompatibility and the best possible mechanical properties.

#### Vulkan® Grade 4 titanium "Cold forming"

- √ Higher strength
- √ Greater Biocompatibility
- √ Advanced Mechanical Properties

# Comparison of the different compositions of titanium

Titanium		Mechanical characteris	stics
Description State	Tensile strength N/mm²	0,2% Yield point N/mm² min.	Elongation %
Grade 2	345	230	20
Grade 3	450	300	18
Grade 4	550	440	15
Grade 4 MCW Medical Cold Worked	800-900	> 700	> 10

# Surgical Protocol

# Vulkan® Internal Hex.

These indications have been made for guidance (only). Bone drilling must be done carefully and taking into account the different bone density characteristics (Type I-IV).

Important considerations (to be taken) during bone drilling

- · Use copious/profuse external irrigation of pre-refrigerated NaCl at 5°C solution.
- Prepare the implant bed site with sequential drilling (straight up-and-down motion during osteotomy).
- · Drill the osteotomy using light pressure.

#### Recommended drill speed:

(Must be individualised based on the bone density type)

Pilot Drill	850 r.p.m.
Drill 2.5	800 r.p.m.
Drill 2.8	750 r.p.m.
Drill 3.2	650 r.p.m.
Drill 3.65	650 r.p.m.
Drill 4.60	550 r.p.m.
Countersink Drill	350 r.p.m.

# **Drilling Sequence**

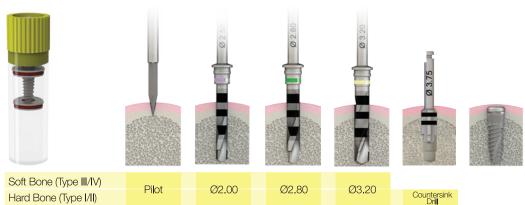




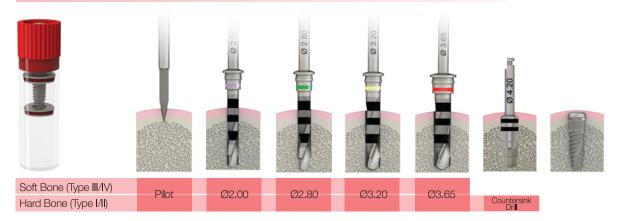
# Surgical Protocol

Vulkan® Internal Hex.

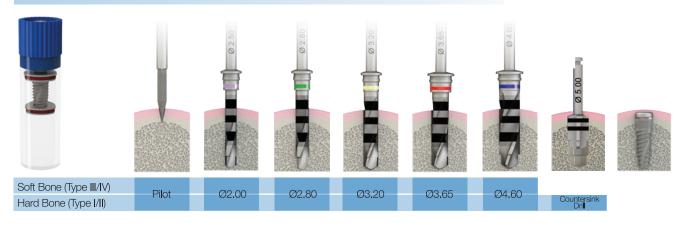




#### Ø4.2mm

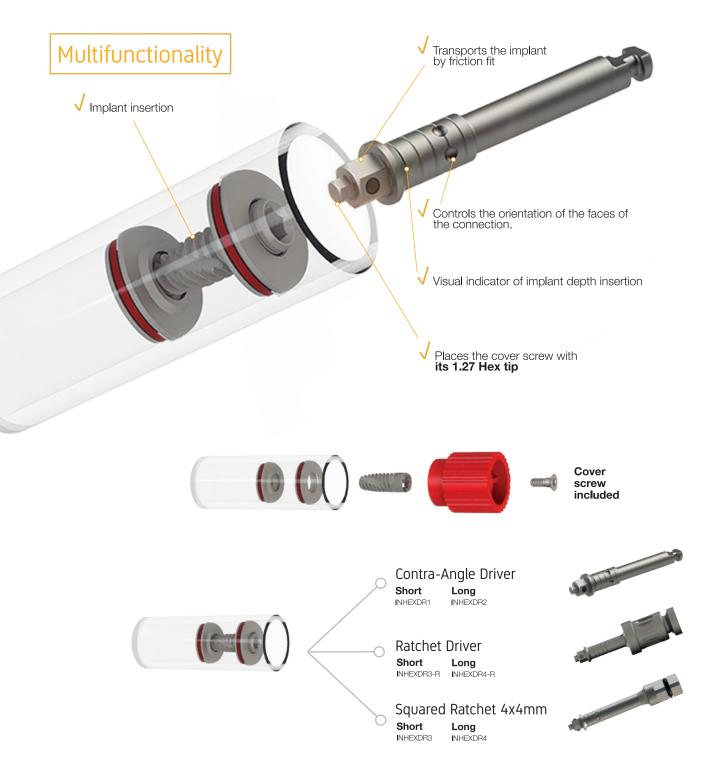


# Ø5.0mm



# **Smart Implant Driver**

Vulkan® Internal Hex.





# Step-by-Step Implant Placement

Vulkan® Internal Hex.



#### STEP 1

Lift off the coloured cap to open the vial containing the implant. Place the cap into a sterile field. The implant cover screw comes attached to the top of the cap.



Attach the implant driver to the contra angle.



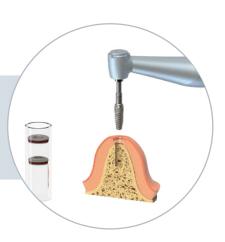


#### STEP 3

Connect the contra angle driver to the implant by exerting slight axial pressure. They will remain attached because the driver presents an elastic retention feature (rubber dots) in the area that connects to the implant. Remove the implant from the vial and carry it to the implant bed.

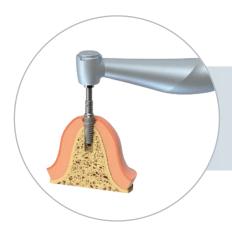
#### STEP 4

Begin inserting th implant with the contra angle seteted at low speed 10-15 rpm at 30-35 Ncm



# Step-by-Step Implant Placement

# Vulkan® Internal Hex.



#### STEP 5

Insert the implant 75% of it's lengthts, maximum torque 30-35 Ncm



Finalize the implant installation manually, preferably with the dynamometric ratchet at maximum torque set to 40-45 Ncm



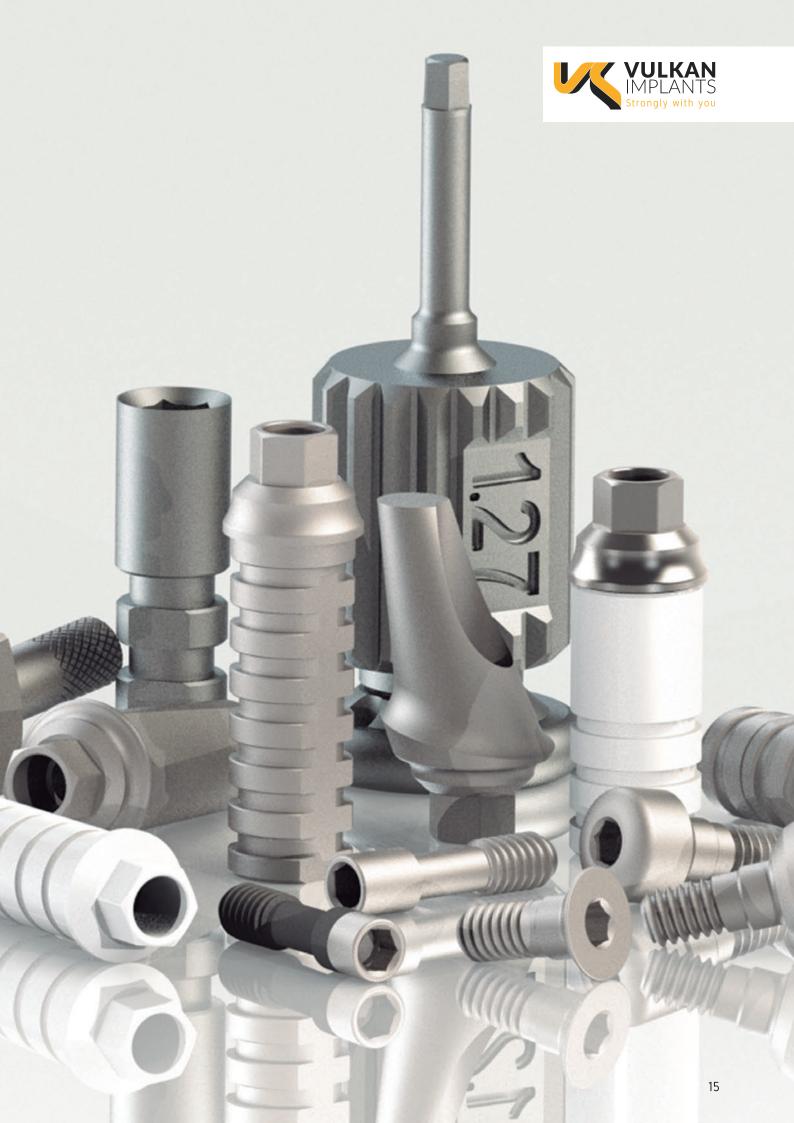
#### STEP 7

Remove the cover screw from the vial cap with the H1.27 hand driver.

#### STEP

Hand-tight the cover screw into the implant with a maximum torque of 10Ncm.





# Vulkan® Internal Hex.,

# Prosthetic Solutions and Tools

# Introduction

Reliable and innovative prosthetic solutions ensure the perfect fit and maximum robustness.

As a result of our advanced manufacturing process, we obtain a tolerance of only 5  $\mu$ m, guaranteeing a perfect and extremely accurate sealed connection of the prosthetic components.

#### Index

#### Prosthetic Solutions and Tools

- Main Components		17-18
- Transepithelial Multi-U	se® System	19-20
- Vulkan® Tissue Care®		21
- Overdenture VulkanLo	oc® System	22
- CAD-CAM Componer	nts	23
- Surgical and Prostheti	ic Tools - Surgical kit	2/



#### Single Prosthetic Driver

All Vulkan® Internal Hex prosthetic components work with the 1.27 Hex. Hand or Contra-Angle Driver (except for the Straight Multi-Use® Abutment and the VulkanLoc® system).

# Main Prosthetic Components





# Healing

#### Closing Screw

10 Ncm (max.)

20 Ncm (max.)



Healing Cap - Emergency Ø3.5



VINH012035



VINH013035



h4.0 mm VINH014035



h5.0 mm VINH015035



VINH017035

Healing Cap - Emergency Ø4.5 (Grade 5 Titanium)



VINH012045



VINH013045



VINH014045



h5.0 mm VINH015045



h7.0 mm VINH017045

Healing Cap - Emergency Ø5.5 (Grade 5 Titanium)



h2.0 mm VINH012055



h3.0 mm VINH013055



h5.0 mm VINH015055



h7.0 mm VINH017055

# **Impression**

Impression Coping (Grade 5 Titanium)



Open Tray VINH0201



**Closed Tray** VINH0202

Analog (Stainless steel)



VINH03

#### Screw Retained Restoration













#### **Cemented Restoration**











25° h1.0 mm - VINH070125 25° h2.0 mm - VINH070225 25° h3.0 mm - VINH070325

# **Prosthesis Screwed Angled**





2- VINH0503



Engaging - 17° 1- VCHA170001 2- VINH0504



Engaging - 30° 1- VCHA300001 2- VINH0504

# Angled Clinical Screw (Grade 5 Titanium)

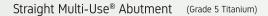


# Transepithelial Multi-Use® System





# Multi-Use® Abutments





h1.0 mm VINH101000



h2.0 mm VINH102000



h3.0 mm VINH103000



h4.0 mm VINH104000



h5.0 mm VINH105000

Angled Multi-Use® Abutments (Grade 5 Titanium)



17° h2.0 mm VINH102017



17° h3.0 mm VINH103017



17º h4.0 mm VINH104017



30° h4.0 mm VINH104030



30° h5.0 mm VINH105030



30° h6.0 mm VINH106030

Multi-Use® VulkanLoc Abutment (Grade 5 Titanium)

20 Ncm (max.)

30 Ncm (max.)



# Healing

#### Healing Cap for Multi-Use® (Integrated screw)



Titanium MU0103

# **Impression**

Impression Coping for Multi-Use® (Grade 5 Titanium)



Open Tray MU0201



Closed Tra MU0202





MU03

#### Screw Retained Restoration

Castable Cr-Co Castable Multi-Use® (POM C) Multi-Use® (CrCo + POM C)

Temporary Abutment Multi-Use®

**Angled Clinical Screw** Multi-Use® (Grade 5 Titanium)







MU0502



Titanium MU0602



MU0602P



15 Ncm (max.) Titanium DLC MU09T



MU09

# **Prosthesis Screwed Angled** Multi-Use®



Antirrotatorio - 17º 1- VCHA170001 2- MU0504



Antirrotatorio - 30° 1- VCHA300001 2- MU0504

# **Angled Clinical Screw** Multi-Use®

Tetralobular connection



#### Straight Driver Multi-Use®



Contra-Angle VDMU-1



Ratchet VDMU-2



Transpotator Multi-Use Straight VDMU-4





# Vulkan® Tissue Care

\* Only for single prostheses





# Straight Tissue Care Abutment + Screw

(Grade 5 Titanium)







VINH14N0020-X

VINH14N0030-X VINH14N0040-X

Tissue Care Screw

(Grade 5 Titanium)







VINH15N0040

Healing

Healing Cap for Tissue Care (Grade 5 Titanium)



TCS0101

# **Impression**

Impression Coping for Tissue Care (Grade 5 Titanium)



TCS0202 Non-Engaging

Analog for Tissue Care

TCS0300

# Screwed prosthesis

Castable Tissue Care (POM C)

Cobalt-Chrome Castable Tissue Care (CR CO)

Temporary Abutment Tissue Care

Clinical Screw for Tissue Care



TCS0400



TCS0500 Non-Engaging



TCS0600 Non-Engaging



TCS0956



21

(Stainless Steel)

Titanium Grade 5

Angled prosthesis

#### Angled Cr-Co Base



1- VCHA170001 2- VCHA300001 3- TCS0500-A

**Angled Screw** 



\* CAD-CAM materials on page 23

# Overdenture VulkanLoc® System

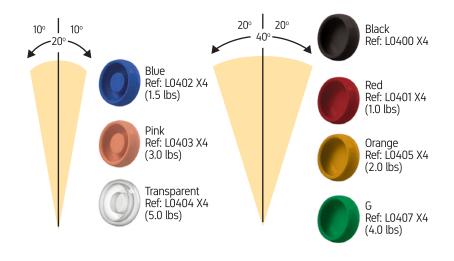




#### VulkanLoc® Abutment (Grade 5 Titanium + TiN Coating)







# VulkanLoc® Processing Package



Housing with Black Retainer



L0409 X4

# VulkanLoc® Analog



Mounter for VulkanLoc®



# **Spacer Ring**



#### Smart Tool VulkanLoc®



VDVL-3

Multi Functional Tool for VulkanLoc® System

# VulkanLoc® Driver



Contra-Angle VDVL-1



Ratchet VDVL-2

# Impression Coping for VulkanLoc®



L0202

# Componentes CAD-CAM

\* Libraries Available: www.vulkanimplants.com





#### Ti-Base



**Engaging** 

h0.5 mm - VINH080501 h1.5 mm - VINH081501 h3.0 mm - VINH083001



Non-Engaging

h0.5 mm - VINH080502 h1.5 mm - VINH081502 h3.0 mm - VINH083002

#### ScanBody Titanium



Intraoral VINH130003

#### Analog (Stainless Steel)



VINH0310

# Ti-Base for transepithelial Multi-Use®



Engaging H.0.5 MU080502

#### ScanBody Multi-Use® Titanium



Intraoral MU13R02

# Analog

Multi-Use<sup>®</sup> (Stainless Steel)



MU0310

# Ti-Base for transepithelial Tissue Care®



Engaging H.0.5 TCS080501

#### ScanBody Tissue Care®



Intraoral TCS1301

# Analog Tissue Care®





TCS0310

# CADCAM EXOCAD Herecology The control of the cont

Download the CAD-CAM libraries on our website:

www.vulkanimplants.com

# Surgical and prosthetic Tools







VTF13-1 13mm

VTF14-1 14mm

VTF15-1 15mm

VTF13-2 13mm

VTF14-2 14mm

VTF15-2 15mm

VFAV375

VFAV420

VFAV500

# Surgical and prosthetic Tools







VSK- INT Dynamometric ratchet VDIN2 Drivers Ø7 connection Drill Stoppers not included

VSK- INT-T

Dynamometric ratchet VDIN2 Drivers Ø7 connection **Drill Stoppers included** 

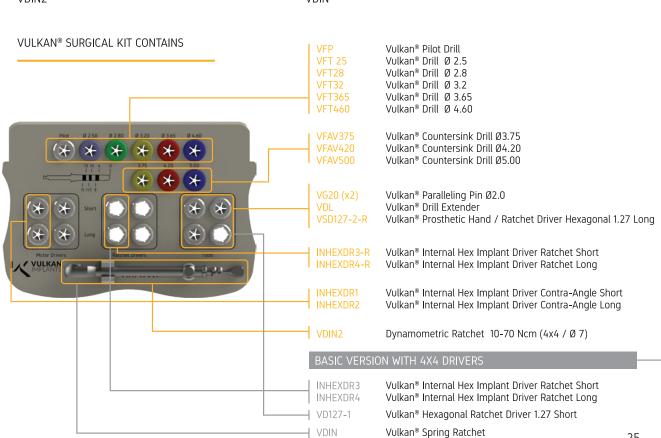
\*Stoppers

VSK2-INT Dynamometric ratchet VDIN Drivers 4x4 connection Drill Stoppers not included

VSK2- INT-T Dynamometric ratchet VDIN Drivers 4x4 connection Drill Stoppers included



ANNIH . Spring Ratchet **VDIN** 







#### R&D+i

Our Research, Development and Innovation team is made up of **engineers and doctors** with long, extensive and successful experience in the development of dental implants and prosthetic components.

Together, they investigate and design the Vulkan® Implants innovative products according to user needs under the most advanced protocols of Medical Engineering and in accordance with UNE 166002.

#### STATE-OF-THE-ART-TECHNOLOGY

Vulkan® products are known for their high precision, quality and robustness. This is possible, among other things, thanks to the *skillfulness of our specialists*, experts in dental technology, and the latest CNC machinery which allow us to guarantee tolerances of only  $5~\mu m$ .

We can proudly say that our products are manufactured with the most accurate technological system in the world.



#### **BEST QUALITY GUARANTEED**

Our Quality Control Department applies the more rigorous control system and has been certified under the most strict European quality standards. Robotized computer machines with artificial vision analyze and ensure the precise measurement of each implant and prosthetic component. Also, through an innovative optical laser technology, we inspect up to the most micrometric detail of the implants or prosthetic components.

Finally, to ensure the perfect functionality of our product, our team physically check the perfect fit of each item. 100% unitary control.

# **European Quality Standards**

ISO 9001

ISO 13485

**IQNet** 

CE Marking

**AEMPS Licence** 













#### CASE CCVINH1501



After



4 month after surgery



1 year after surgery

#### CASE CCVINH1502





4 month after surgery





1 year after surgery

#### CASE CCVINH1503



After



4 month after surgery



1 year after surgery

#### CASE CCVINH1601





2 month after surgery

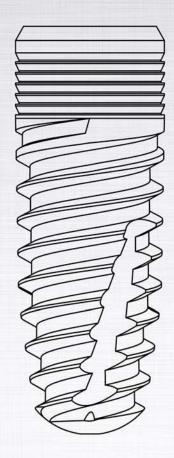




8 month after surgery

<sup>+</sup> Information, please visit www.vulkanimplants.com/clinical-cases/







Vulkan® Internal Hex.













