OSSTEM IMPLANT

Surgical Manual

ESR KIT

Introduction

Welcome,

and thank you for choosing Osstem Implant products. This catalogue is designed to support dental professionals with product information, clinical workflows, and practical guidance for daily use. It is important to inform patients about the option of dental implant treatment and the potential benefits it may provide. For further information, please contact your local Osstem representative.

Important Notice

This document is provided for **informational and educational purposes only** and does not replace the applicable product label, the current product-specific Instructions for Use (IFU), formal clinical training, or independent professional judgment. All product information, specifications, and protocols are subject to change without notice. Not all products may be approved, cleared, released, licensed, or available in all markets. Product illustrations are not shown to scale. Despite careful preparation of this catalogue, typographical, editorial, translation, or printing errors may occur. **All critical information must be verified against the current product-specific IFU and product label before use.**

Electronic IFU (per (EU) 2021/2226)

- Surgical Drill & KIT System is eligible for provision of electronic instructions for use (e-IFU) under Regulation (EU) 2021/2226 for professional users.
- e-IFUs are available at [website URL: ifu.osstem.com] in the official languages required by the Member State(s) where the device is placed on the market.
- The e-IFU content is consistent with the paper version; all updates are promptly reflected in both versions.
- If requested, a paper copy of the IFU will be supplied free of charge, within 7 calendar days.
- The e-IFU website maintains historical versions for traceability of all previously applicable instructions.
- Labeling on the product/package indicates the provision of e-IFU and how to access it online.

Surgical Manual | English Edition

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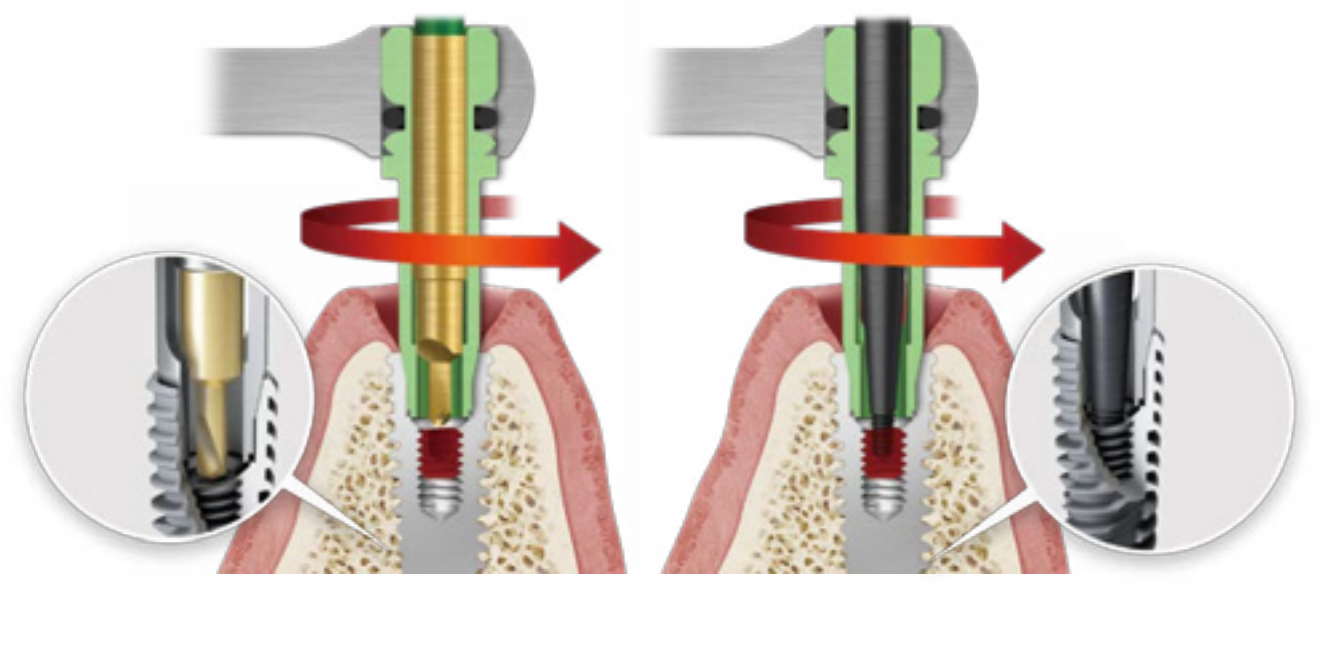
158 00 Prague, Czech Republic

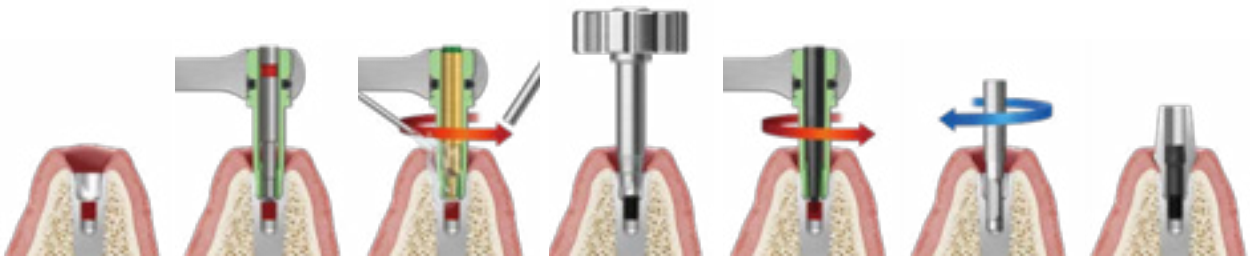
Note: *This brochure is based on the global 2021 Osstem Surgical Manual and has been visually revised and adapted for the European market. Product availability and specifications may vary by country and are subject to change without notice. Images are for illustrative purposes only. For professional use only.*

ESR KIT

ESR KIT can easily and conveniently remove the abutment or screw in case of problems with the abutment or screw and even allows restoration of the thread



Simple and fast 2-step removal



Screw fracture | Reverse drill | SR drill | Screw holder | SR tip | Re-tap | Prosthesis

Unloaded fractured screw (weak connection with the internal thread of the implant)

case 1

case 2

Loaded fractured screw (strong connection with the internal thread of the implant)

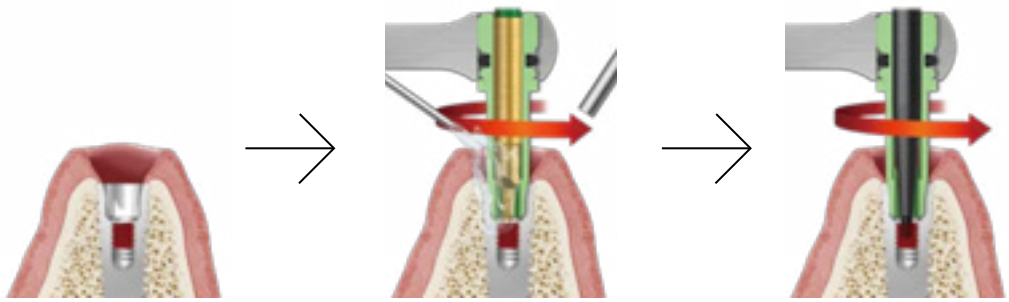
case 3

Refer to the case if the galling of internal thread of the implant occurs

1 Indication

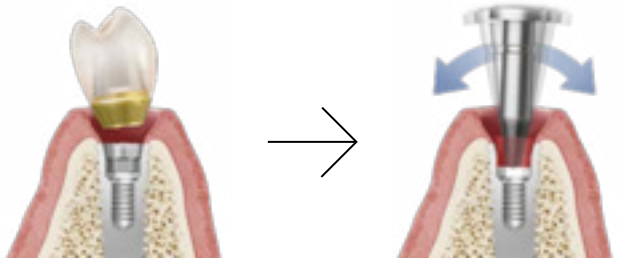
A In case of removing a fractured screw

· Use the screw removal drill and screw removal tip to remove the fractured screw



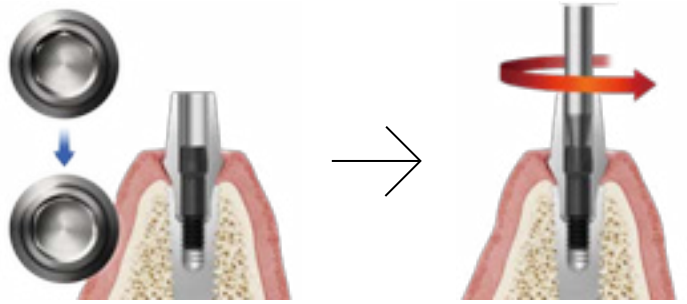
B In case of removing a fractured abutment

· Use the abutment removal tip to remove the fractured abutment



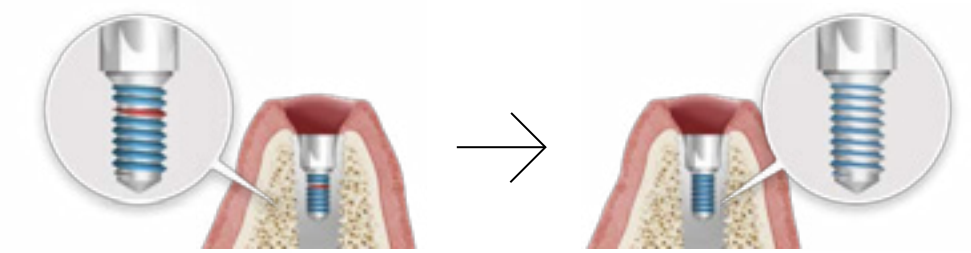
C In case of removing a slipped hex screw

· Use the abutment removal tip-mini to remove the slipped hex screw



D In case of restoring the internal thread of the implant

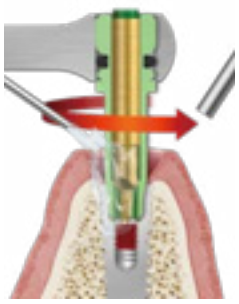
· Restore the internal thread of the implant using Re-tap



2 Feature

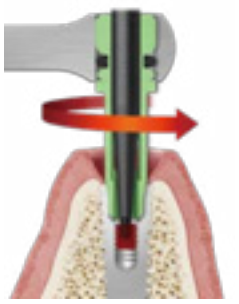
A Simple and fast two-step removal

Step 1



SR drill

Step 2



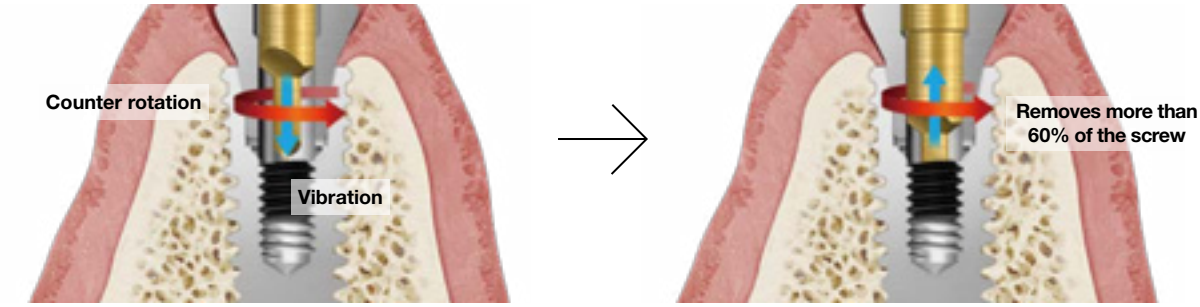
SR tip

B Guide to prevent shaking and centering of the SR drill and SR

· Classify according to the implant system and diameter and connect to the implant for use

For TS use　For SS use　For US use

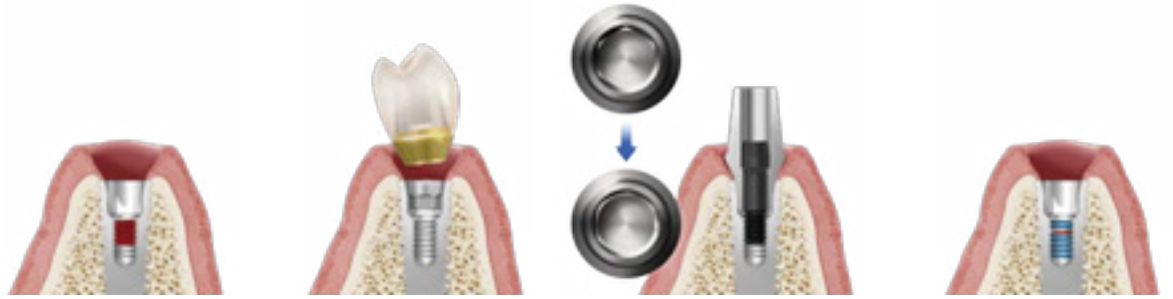
C Superior cutting power and durability of the SR drill



High-strength special materials with superior cutting power

Easy screw removal

D Applicable to various cases of prosthetic failure

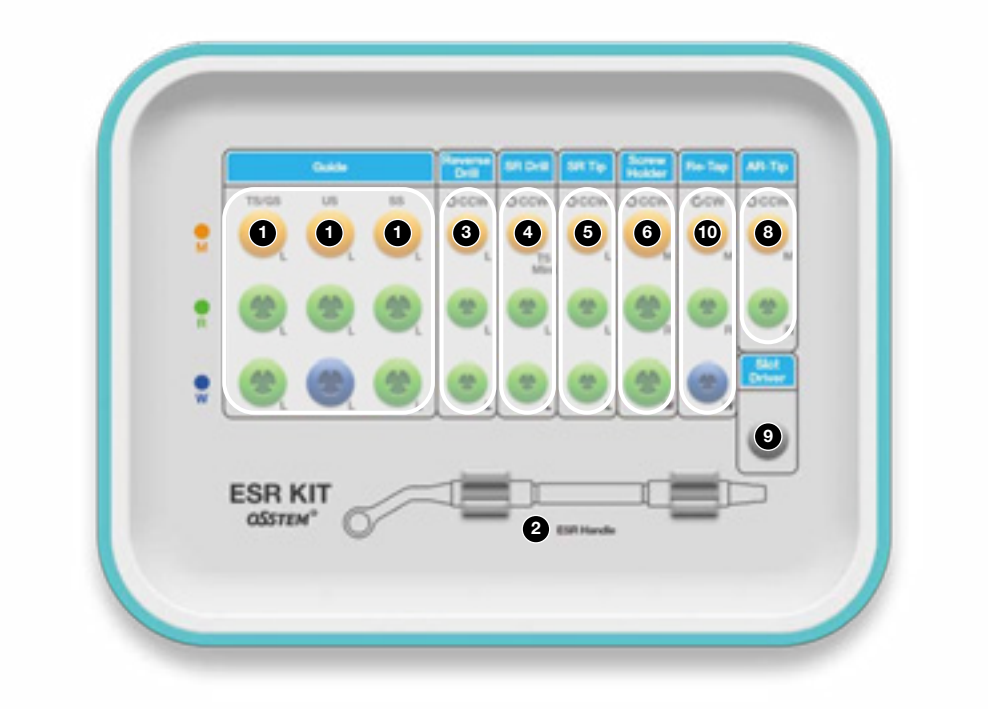


Screw fracture　Abutment fracture　Screw hex slip　Galling of interior thread

3 KIT components

ESR KIT

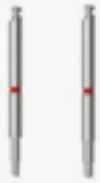
- Screw fracture removal tool (1~7)
- Abutment fracture removal tool (8)
- Hex slip screw removal tool (9)
- Internal thread of the Implant restoration tool (10)



1 **Guide** (TS, LS, SS)

2 **ESR handle**

3 **Reverse drill**



4 **Screw removal drill**

5 **Screw removal tip**

6 **Screw holder**

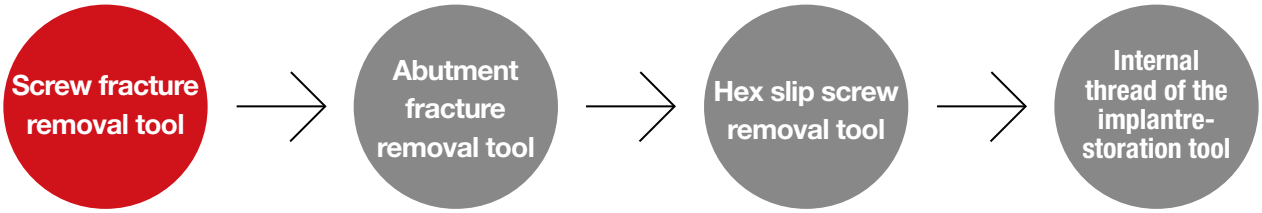
7 **Torque driver handle**

8 **Abutment removal tip**

9 **Slot driver**

10 **Re-tap**

4 Guide to using the KIT components



Consists of tools for drilling holes to remove fractured screws inside implants or for tightening screws

1 Guide

2 ESR handle

3 Reverse drill

4 Screw removal drill

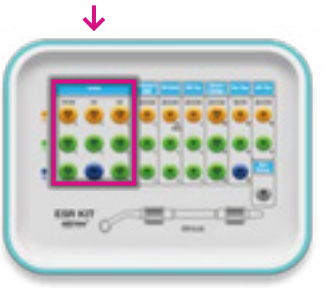
5 Screw removal tip

6 Screw holder

7 Torque driver handle

❶ Guide

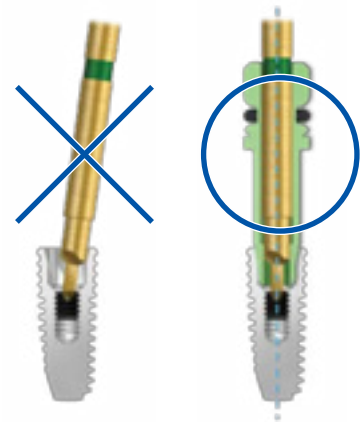
Use it to prevent shaking as well as to maintain the balance of the instrument when using the reverse drill, SR drill, and SR tip



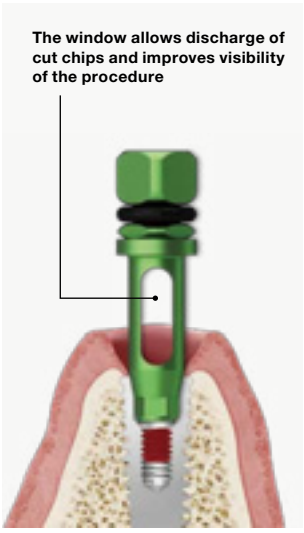
Directions for use

· Choose a guide, considering the implant system and connection.
· Insert into the implant where the screw fracture occurs.

For TS use | For SS use | For US use

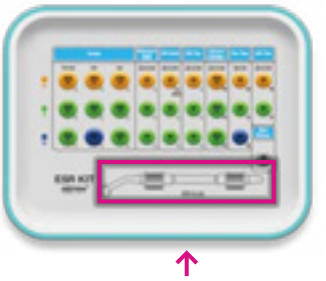


When not using a guide | When using a guide



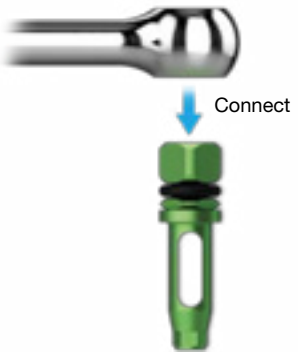
❷ ESR handle

Use it to fix the guide firmly

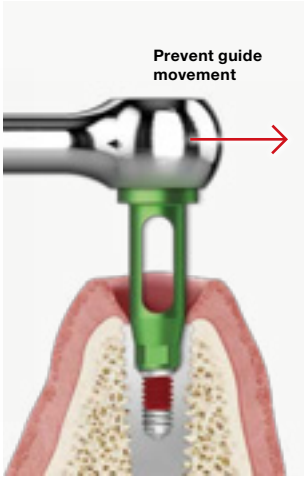


Directions for use

· In order to fix the guide, connect it to the guide.



Guide



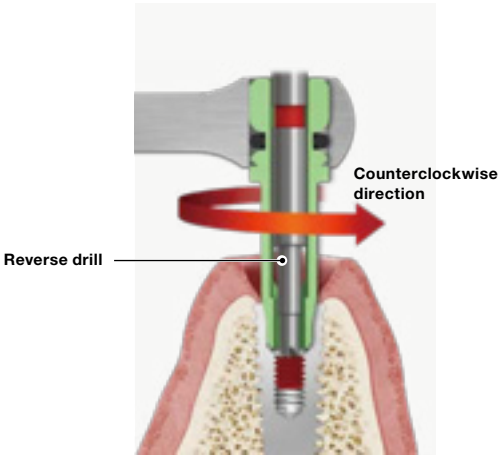
❸ Reverse drill

Use it to remove the fractured screw inside the implant

Directions for use

· Connect the reverse drill to the handpiece.
· Switch the engine to reverse mode.
· Insert where the implant guide of the fractured screw is connected.
· The recommended speed is 30–50 rpm.
· Use the screw holder to remove the fractured screw when the red markings of the reverse drill become visible on the guide connected to the implante.
· Reuse is prohibited because it is intended for single use.

M1.6 M1.8/2.0

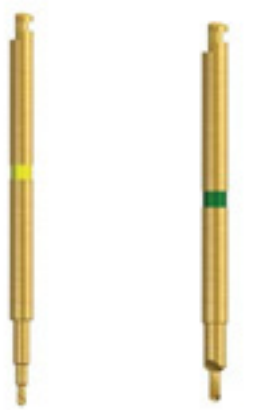


❹ Screw removal drill (SR drill)

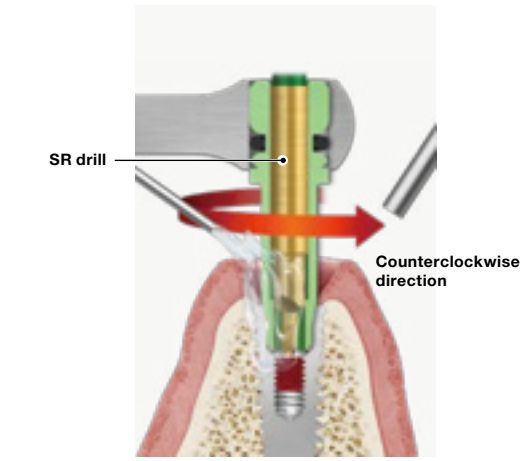
Use to drill a hole to remove the fractured screw inside the implant

Directions for use

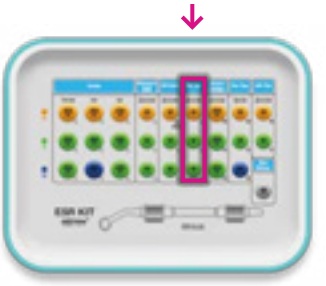
· Use it when the fractured screw cannot be removed with a reverse drill.
· Switch the engine to reverse mode.
· Insert it into the site where the implant guide of the fractured screw is connected.
· The recommended speed is 1,200–1,500 rpm.
· Remove the cut chips with suction by conducting irrigation to the guide window.
· Drill until the marking colors on the guide connected to the implant are no longer visible.
· Reuse is prohibited because it is intended for single use.



M1.6 M2.0



❺ Screw removal tip (SR tip)

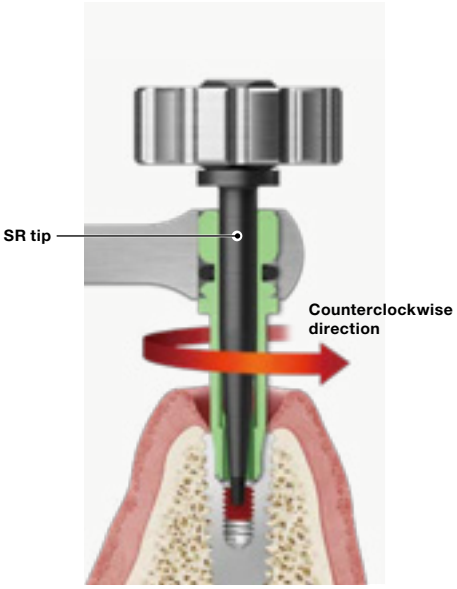


Use it to remove the fractured screw by connecting it to the hole created on the top surface of the fractured screw

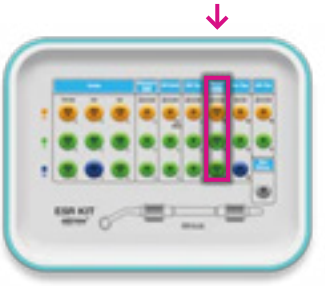
Directions for use

· Connect the screw removal tip to the torque driver handle and insert it into the guide.
· Connect the screw removal tip to the hole created on the top surface of the fractured screw.
· Remove the fractured screw by rotating the torque driver handle counterclockwise.
· Reuse is prohibited because it is intended for single use.

M1.6 M2.0



❻ Screw holder

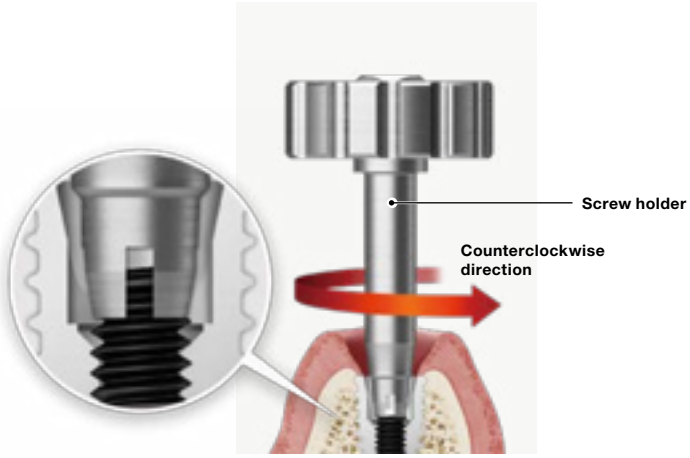


Use it to remove the fractured screw protruding above the internal thread of the implante

Directions for use

· Connect the screw holder if part of the fractured screw is protruding.
· Connect the torque driver handle and rotate counterclockwise to remove the fractured screw.

M1.6 M2.0

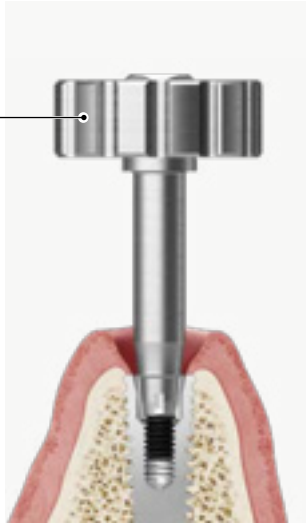


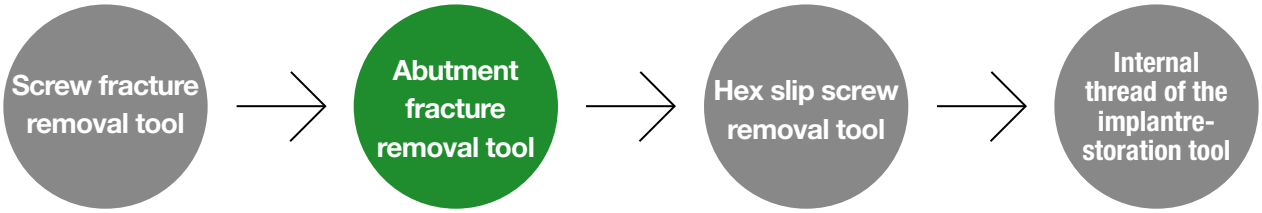
❼ Torque driver handle

When connected to products such as the SR tip, AR tip, and screw holder, use it when rotating by hand

Directions for use

· Connect with products such as the SR tip, AR tip, and screw holder.
· Hand-rotate in the recommended direction.



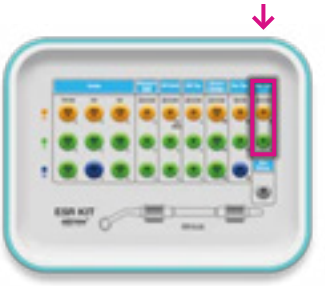


Consists of tools for removing fractured abutments and mounts

8 Abutment removal tip

❽ Abutment removal tip (AR tip)

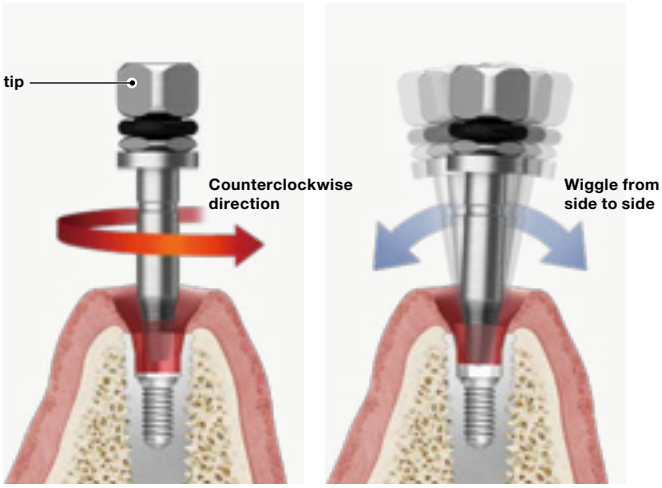
Use it to remove fractured abutments and mounts

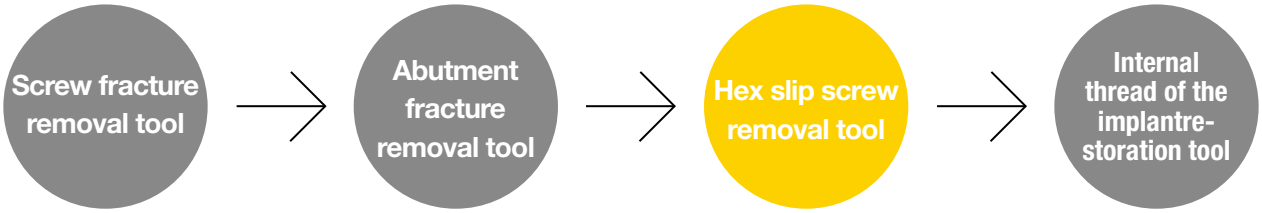


Directions for use

· Connect to the torque driver handle.
· Connect to the fractured abutment hole.
· Remove the fractured abutment by rotating it counterclockwise and wiggle it from side to side while holding it with forceps.
· The Mini can be used for screw hex slips. (After fixing it to the hex of the screw, rotate it counterclockwise to remove the screw.)

Mini Regular





Consists of tools for removing slipped hex screws

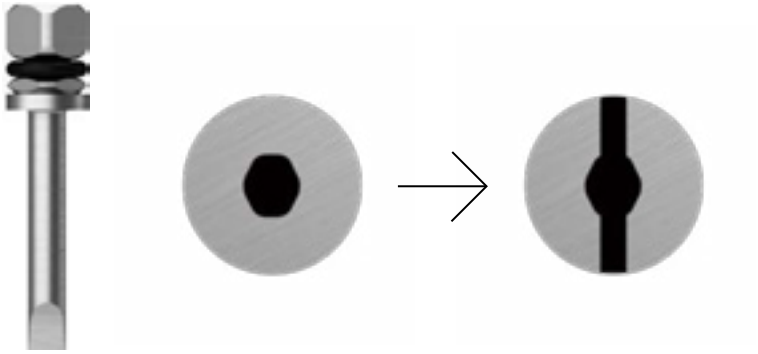
9 Abutment removal tip

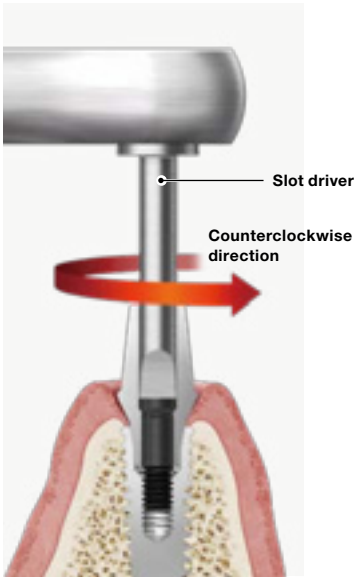
❾ Slot driver

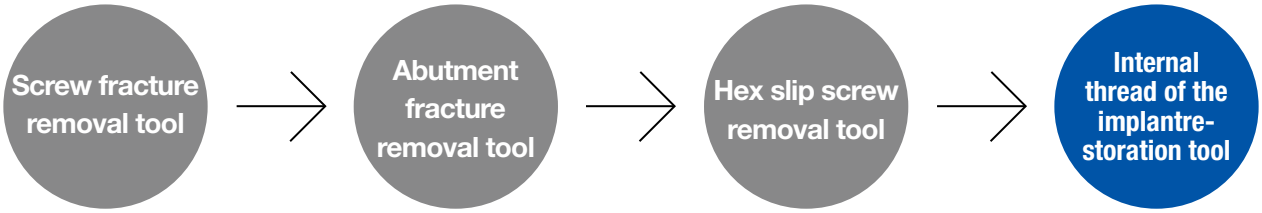
Use it after forming a slot with a Ø0.8 round bur when a force cannot be applied to the driver due to damage to the hex of the healing abutment, cover screw, or abutment screw,

Directions for use

· Form a slot with a Ø0.8 round bur in the damaged hex.
· Connect it to a torque wrench or ratchet wrench.
· Remove by rotating counterclockwise.





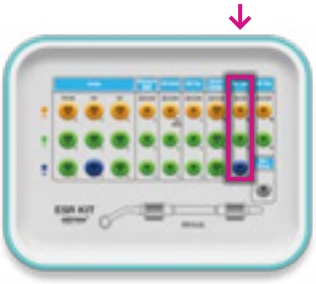


Consists of tools for restoring the internal threads inside the implant to their initial states

10 Re-tap

⑩ Re-tap

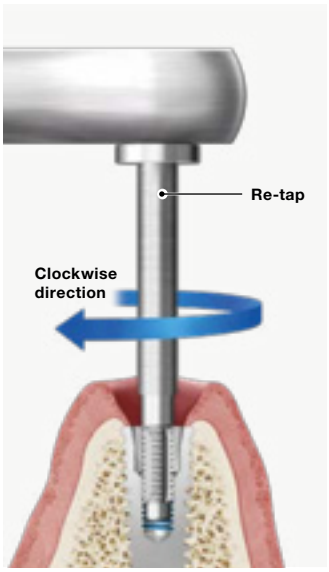
Use it to restore the thread to its initial state when the screw cannot be connected to the damaged area of the implant's internal thread

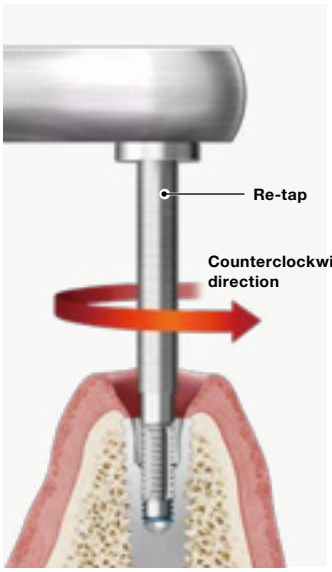


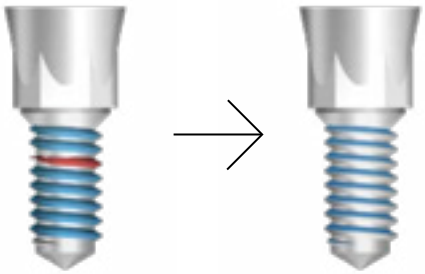
Directions for use

· Connect it to a torque wrench or ratchet wrench.
· Form a thread by rotating clockwise at 30 Ncm.
· Remove the Re-tap in a counterclockwise direction.
· Repeat this process 2–3 times.

M1.6 M1.8 M2.0







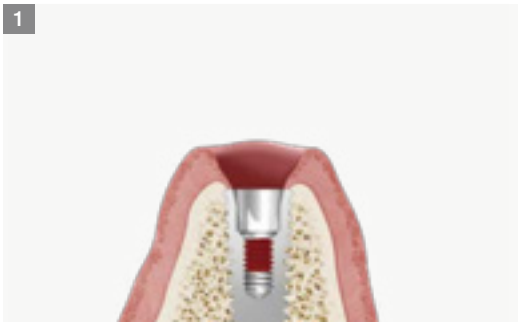
Damaged thread Reformed thread

5 KIT sequence

[Occurrence of screw fracture]

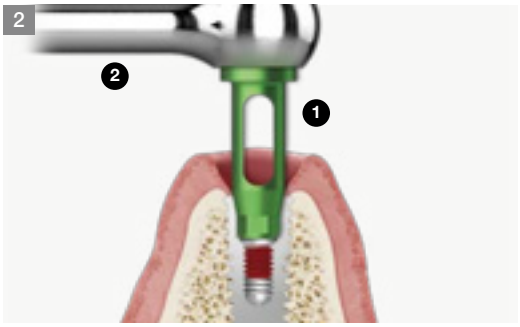
Ⓝ: Tool number

1



Occurrence of screw fracture

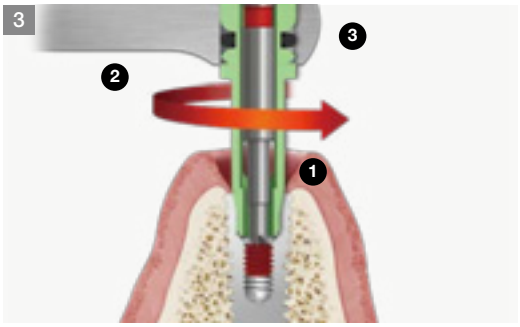
2



Connect the guide (ESR handle and guide)

· Insert it into the implant after connecting the ESR handle to the guide.
· Refer to the guide for guide selection.

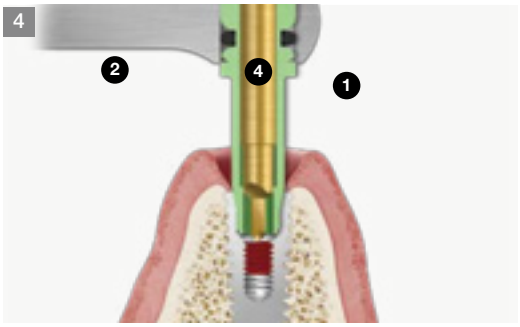
3



Insert the reverse drill

· Connect the reverse drill to the handpiece and insert it into the guide. Counterrotate and try to remove the fractured screw.
· The recommended speed is 30–50 rpm.
· Use the SR drill if the fractured screw cannot be removed.

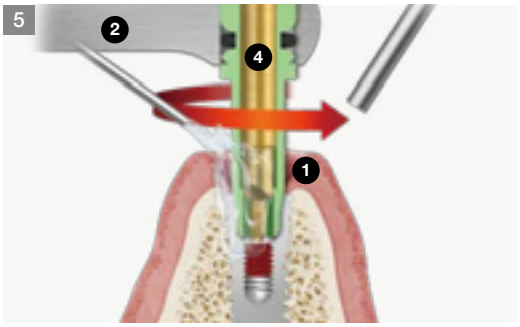
4



Insert the screw removal drill (SR drill)

· Connect the SR drill to the handpiece and insert it into the guide.

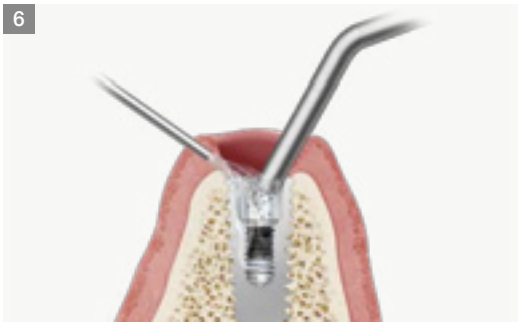
5



Drilling of the SR drill

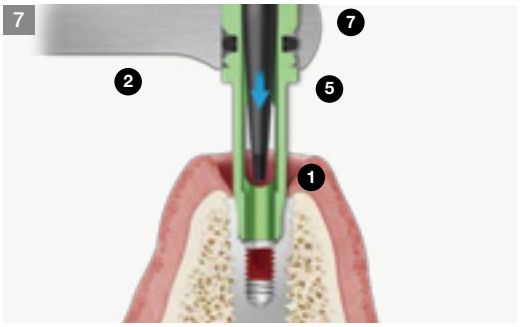
· Drill by rotating counterclockwise while gently pumping with a force of 5–10 Ncm until the color band of the SR drill handle is no longer visible.
· The recommended speed is 1,200–1,500rpm.

6



Residual chip removal (suction)

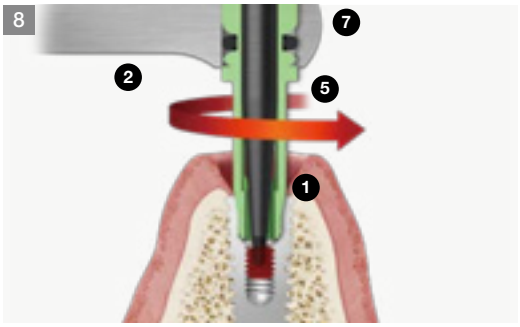
7



Insert the screw removal tip (SR tip)
(ESR handle/guide/SR tip/torque driver handle)

· After re-connecting the guide, connect the SR tip to the torque driver handle and insert it.

8

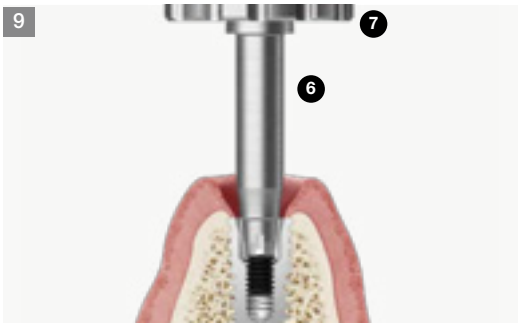


Counterrotate the SR tip

· After firmly securing the SR tip, remove the fractured screw by slowly rotating it counterclockwise.

· Use the screw holder to remove the fractured screw if it cannot be removed.

9



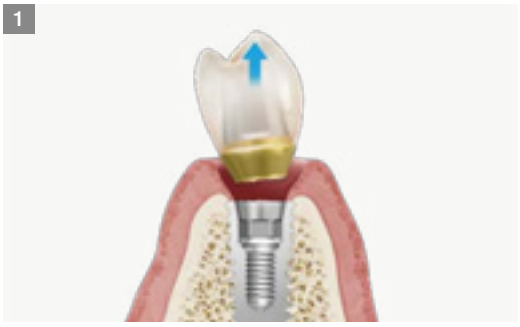
Remove using the screw holder
(Screw holder/torque driver handle)

· If the fractured screw has not been completely removed while coming up, remove it by slowly rotating the screw holder counterclockwise.

[Occurrence of abutment fracture]

Ⓝ: Tool number

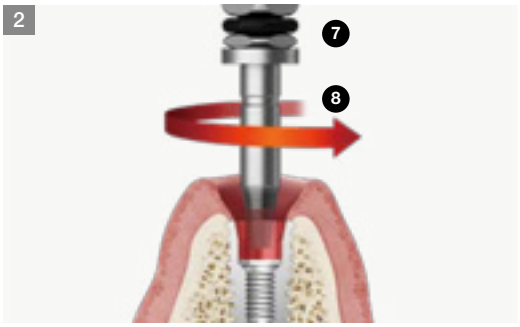
1



Occurrence of abutment fracture

· Remove the crown.

2

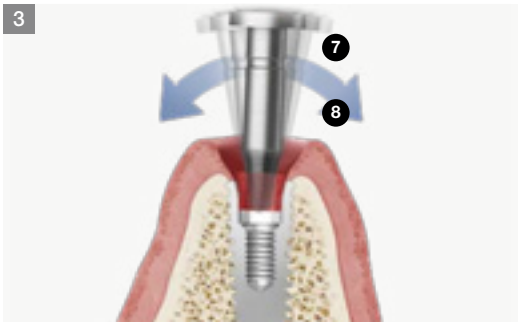


Fixe the abutment removal tip
(AR tip/torque driver handle)

· Connect the abutment removal tip to the torque driver handle.

· Rotate counterclockwise to firmly connect to the fractured abutment screw hole.

3



Remove the fractured abutment

· Connect the torque wrench to the abutment removal tip toward the outward direction and fix it firmly to the abutment once again.

· Remove the fractured abutment using forceps and wiggling the tip from side to side.

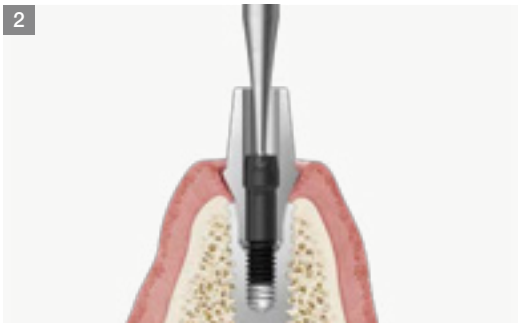
[Occurrence of screw hex slip]

Ⓝ: Tool number

1

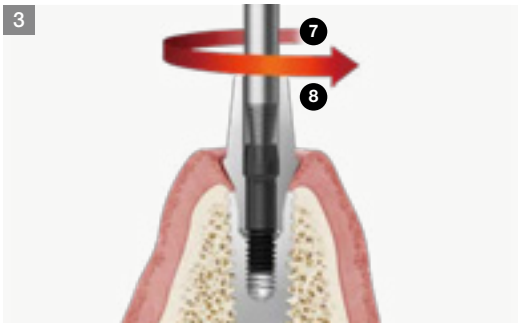
Occurrence of screw hex slip

2



Form a hole in the screw hex part
(Ø0.8 round bur)

3



Connect the abutment removal tip-mini
(AR tip-mini/torque driver handle)

· Connect the AR tip-mini to the torque driver handle.

· Remove it by rotating counterclockwise from the screw hole.

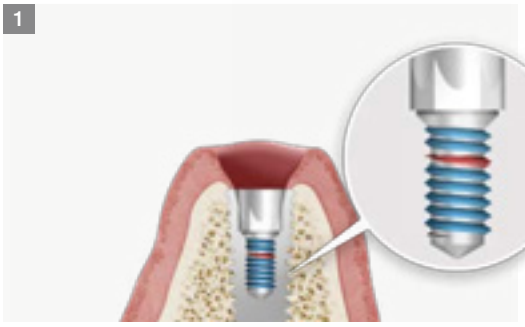
4

Complete removal of the screw hex slip

[Occurrence of a stripped interior thread of the implant]

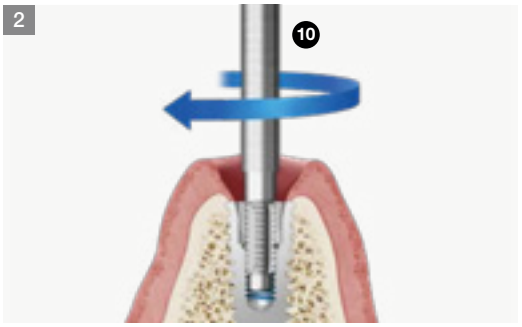
Ⓝ: Tool number

1



Occurrence of galling of interior thread of the implant

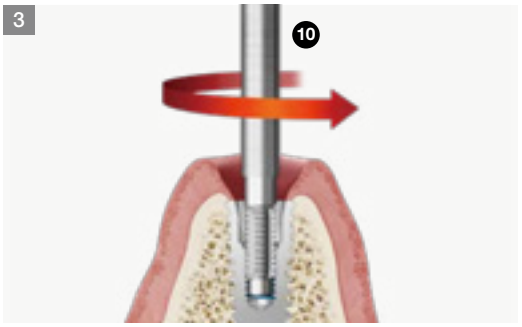
2



Tapping by forward rotation
(torque wrench/Re-tap)

· Connect the Re-tap to the torque wrench or ratchet wrench.
· Apply the torque by rotating clockwise (forward rotation) after connecting to the implant.
· Tap while slowly rotating clockwise using force under 30 Ncm.

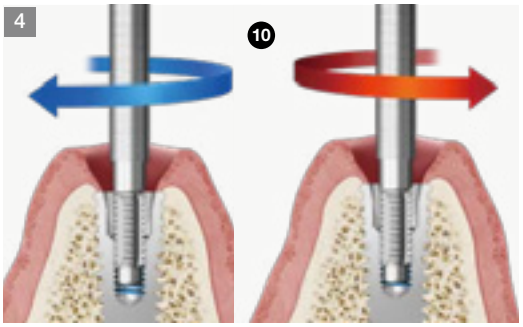
3



Remove by reverse rotation

· If the torque wrench requires more than 30 Ncm of torque, rotate counterclockwise (reverse rotation) to remove the Re-tap.

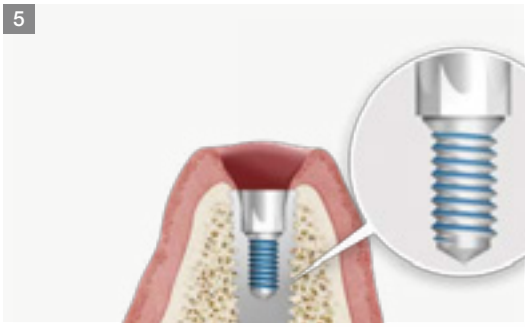
4



Repeat the tapping process

· Repeat the forward/reverse rotation 2–3 times.
· Stop when tightening can be completed using torque less than 30Ncm.

5



Restoration of the thread

Osstem

: Common use

Type / Connection	TS		SS		US		KS	
	Short	Long	Short	Long	Short	Long	Short	Long
								
Mini	OGTMS	OGTML	OGUMS	OGUML	OGUMS	OGUML	-	-
Regular	OGTRS	OGTRL	OGSRS	OGSRL	OGURS	OGURL	OKGRS	OKGRGL
Wide	-	-	OGSRS	OGSRL	OGUWS	OGUWL	-	-

Nobel Biocare

Type / Implant	Active		Replace	
	Short	Long	Short	Long
				
Ø3.5	OGNA01S	OGNA01L	-	-
Ø4.3	OGNA02S	OGNA02L	OGNR02S	OGNR02L
Ø5.0	OGNA02S	OGNA02L	OGNR03S	OGNR03L
Ø6.0	-	-	OGNR04S	OGNR04L

Nobel Biocare

Type / Implant	MkIII	
	Short	Long
		
Ø3.5	OGUMS	OGUML
Ø3.75	OGURS	OGURL
Ø4.0	OGURS	OGURL
Ø5.0	OGUWS	OGUWL

Straumann

Type / Implant	Bone Level	
	Short	Long
		
NC (3.3)	OGSB01S	OGSB01L
RC (4.1)	OGSB02S	OGSB02L
RC (4.8)	OGSB02S	OGSB02L

Type / Implant	Roxolid SLActive	
	Short	Long
		
RN (3.3)	OGSTRS	OGSTRL
RN (4.1)	OGSTRS	OGSTRL
RN (4.8)	OGSTRS	OGSTRL
WN (4.8)	OGSTRS	OGSTRL

Astra

: Common use

Type / Implant	Osseo Speed TX	
	Short	Long
		
Small (3.5 S)	OGAO01S	OGAO01L
Small (4.0 S)	OGAO01S	OGAO01L
Large (4.5)	OGAO02S	OGAO02L
Large (5.0)	OGAO02S	OGAO02L
Large (5.0 S)	OGAO02S	OGAO02L

3i

Type / Implant	Full Osseotite Tapered Certain	
	Short	Long
		
3.25	OGIF01S	OGIF01L
4.0	OGIF02S	OGIF02L
5.0	OGIF02S	OGIF02L
6.0	OGIF02S	OGIF02L

Type / Implant	Full Osseotite Tapered	
	Short	Long
		
Ø4.0	OGURS	OGURL
Ø5.0	OGURS	OGURL
Ø6.0	OGURS	OGURL

Zimmer

Type / Implant	Tapered	
	Short	Long
		
Green (3.7)	OGAO01S	OGAO01L
Green (4.1)	OGAO01S	OGAO01L
Green (4.7)	OGAO02S	OGAO02L
Green (6.0)	OGAO02S	OGAO02L

Biohorizons

Type / Implant	Internal (Tapered Bone Level)	
	Short	Long
		
Yellow	OGZB01S	OGZB01L
Green	OGZB01S	OGZB01L
Blue	OGZB02S	OGZB02L

Type / Implant	External	
	Short	Long
		
Ø3.5	OGUMS	OGUML
Ø4.0	OGURS	OGURL
Ø5.0	OGBES	OGBEL
Ø6.0	OGBES	OGBEL

How to take care of the KITS

1

Soak (saline/distilled water)

· Soak the surgical instruments in saline or distilled water

2

Drying (remove moisture)

· Completely dry all drills, drivers, tools, etc by using a towel or fan.

3

First wash

· After surgery, immediately separate and wash all the used instruments.

4

Organize instruments in the KIT

· Place the completely dried instruments in the KIT
· Make sure they are properly placed in the correct location
· Refer to the color coding for reference

5

Second wash

· Thoroughly wash with distilled water or running water to avoid remnants of blood or foreign debris.

6

Sterilization and storage at room temperature

· Wrap clean kit in a sterilization wrap or pouch and place into sterilizer.
· Sterilize temperature - 121°C to 132°C, time duration 15 - 30 minutes, dried and stored at room temperature.
· KIT re-sterilization is recommended immediately before surgery.
· Before and after sterilization, thoroughly dry (the drills will corrode if not fully dried after sterilization)

Important Information and Legal Notices 2026.03 ver.1.1

1. IMPORTANT NOTICE

This catalogue is intended solely as an informational and educational guide for trained dental professionals. It does not replace the applicable Instructions for Use (IFU), product labelling, formal clinical training, treatment planning, or independent professional judgment.

All clinical protocols, drilling sequences, cleaning instructions, sterilization requirements, torque recommendations, indications, contraindications, warnings, and procedural steps must be verified against the current product-specific IFU and the applicable product label for the relevant REF/product code prior to use.

In the event of any discrepancy between this catalogue and the applicable IFU, product labelling, or other official Osstem documentation, the IFU, labelling, and official product documentation shall prevail.

2. PRODUCT INFORMATION, CHANGES, AND AVAILABILITY

All products, specifications, protocols, recommendations, illustrations, and other information contained in this catalogue are subject to change without prior notice.

Not all products may be approved, cleared, released, licensed, or otherwise available in all markets. Product availability, indications, and regulatory status may vary by country. For information on the current product portfolio, approved indications, and local availability, please contact your local Osstem representative or Customer Service and consult the current official Osstem documentation.

3. PROFESSIONAL USE ONLY

Osstem Implant products are intended for use by appropriately trained dental professionals only. Dental implant treatment involves complex professional procedures and requires appropriate education, clinical training, patient selection, treatment planning, and radiographic as well as clinical evaluation.

The suitability of any procedure must be assessed individually for each patient, taking into account anatomy, bone quality and quantity, occlusion, systemic conditions, oral hygiene, compliance, and any other relevant clinical factors.

4. PRODUCT DESCRIPTION AND COMPATIBILITY

Osstem Implant offers implant fixtures, prosthetic components, surgical instruments, and related materials for dental implant treatment. Product codes, specifications, lot numbers, dates of manufacture, and expiration dates, where applicable, must be checked on the product label before use.

Unless expressly stated otherwise in the applicable product documentation, Osstem Implant abutments, prosthetic components, instruments, and related accessories are intended to be used only with compatible Osstem Implant fixtures and components. Use in combination with components or instruments from other manufacturers may result in improper fit, incomplete locking, loosening, fracture, reduced performance, or other clinical complications.

5. STERILITY, CLEANING, REPROCESSING, AND STORAGE

Sterile products supplied in sterile packaging must be used only if the packaging is intact and the expiration date has not passed. If sterile packaging has been opened, damaged, or has expired, the product must not be used.

Single-use products must not be reused, reprocessed, or resterilized.

Reusable instruments must be cleaned, disinfected, inspected, maintained, and sterilized strictly in accordance with the applicable Osstem IFU before reuse.

Products must be stored in accordance with the applicable labelled storage conditions and protected from moisture, contamination, direct sunlight, and other adverse environmental conditions.

6. CLINICAL PROTOCOLS AND PROCEDURAL GUIDANCE

Any surgical, prosthetic, drilling, insertion, loading, cleaning, maintenance, or other procedural guidance shown in this catalogue is provided for general informational purposes only and must be adapted to the individual patient, the specific product, and the current approved IFU.

Clinicians remain solely responsible for selecting the appropriate treatment protocol and for determining whether the intended procedure, component selection, loading protocol, and clinical application are appropriate for the individual case and within the approved indications for the relevant product.

7. WARNINGS, CONTRAINDICATIONS, AND POSSIBLE COMPLICATIONS

Improper patient selection, inadequate treatment planning, non-compliance with the applicable IFU, improper use, off-label use, product modification, poor oral hygiene, infection, insufficient bone quality or quantity, excessive occlusal loading, or other unfavorable clinical conditions may result in complications or treatment failure.

Possible complications and adverse events may include, without limitation, implant instability or failure, loosening, fracture, bone loss, infection, soft- or hard-tissue complications, prosthetic complications, delayed healing, or the need for revision or removal.

Contraindications and precautions must always be assessed in accordance with the applicable Osstem product documentation and accepted professional standards of care.

8. INTENDED PURPOSE

The products are tools and instruments for surgical placement of Osstem implant fixtures. The drill is used to make implant sites. The cortical drill and tap removes cortical bones or forms threads on bone for the purpose of preventing excessive torque generated when implanting a fixture on hard bone. The drivers are for the placement of the fixture, and the prosthesis is used for setting. In addition, other instruments and tools will be used as aids in the Implant procedure.

The applicable product-specific IFU must always be consulted to confirm the intended purpose, indications, limitations, and approved clinical applications of the relevant product.

9. ACCURACY OF INFORMATION

Although reasonable care has been taken in preparing this catalogue, typographical, editorial, translation, printing, and formatting errors may occur. Information may also become outdated as a result of product updates, regulatory changes, technical revisions, or clinical developments.

No representation is made that this catalogue is complete, current, or error-free in every respect. Users must verify all critical information against the current IFU, product labels, and other official Osstem documentation before clinical use.

10. ILLUSTRATIONS AND EXAMPLES

Product illustrations, diagrams, radiographic examples, case images, and step-by-step demonstrations are for illustrative purposes only. Unless expressly stated otherwise, they are not shown to scale and do not guarantee any clinical outcome.

Example cases do not constitute a promise or representation of treatment success in any individual case.

11. TRADEMARKS AND COMPANY NAMES

All trademarks, trade names, product names, brand names, and company names are the property of their respective owners.

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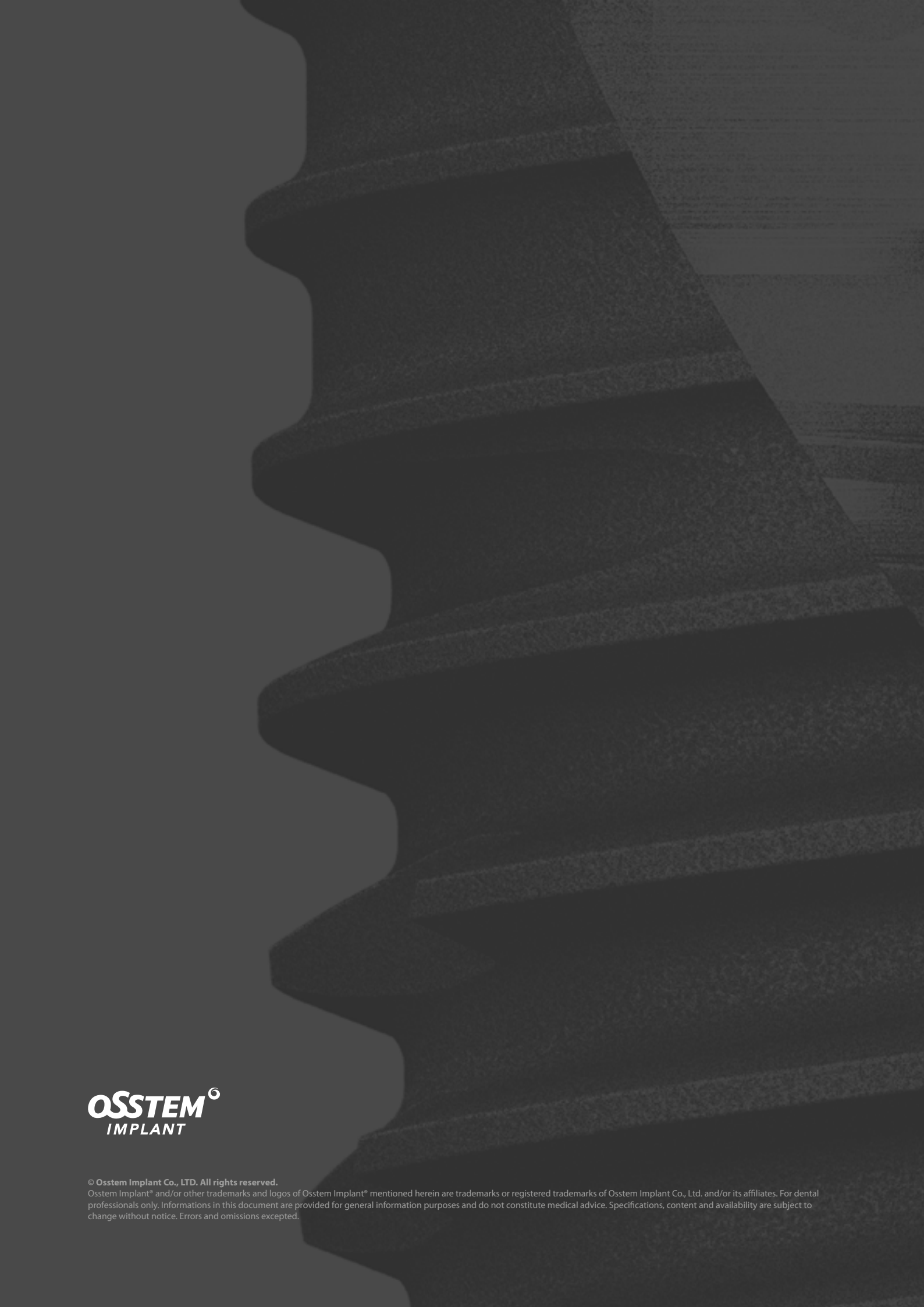

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