

ESR KIT

EFR KIT

Tips for KIT & tool maintenance



- 1 Put the used tools in saline or distilled water during the procedure.



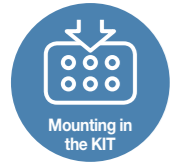
- 2 After the procedure, immerse and wash in alcohol all of the used and unused tools remaining in the Kit.
When tools mounted in rubber are kept as they are for a long time, the tools may corrode due to the moisture generated during the sterilization process. Therefore, unused tools should be washed as well. (At least once every quarter) Hydrogen peroxide should not be used. Marking on the laser or discoloration of anodizing may occur in case of exposure to hydrogen peroxide.



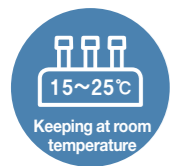
- 3 Rinse thoroughly with distilled water or running water to get rid of blood marks or remaining substances.



- 4 Remove water completely from the tools with dry cloth or fan heater.



- 5 Mount the dried tools in the KIT case.
(Refer to the color code for convenience)



- 6 Autoclave the KIT with the tools mounted (at 132°C, for 15 minutes) and keep it at room temperature.

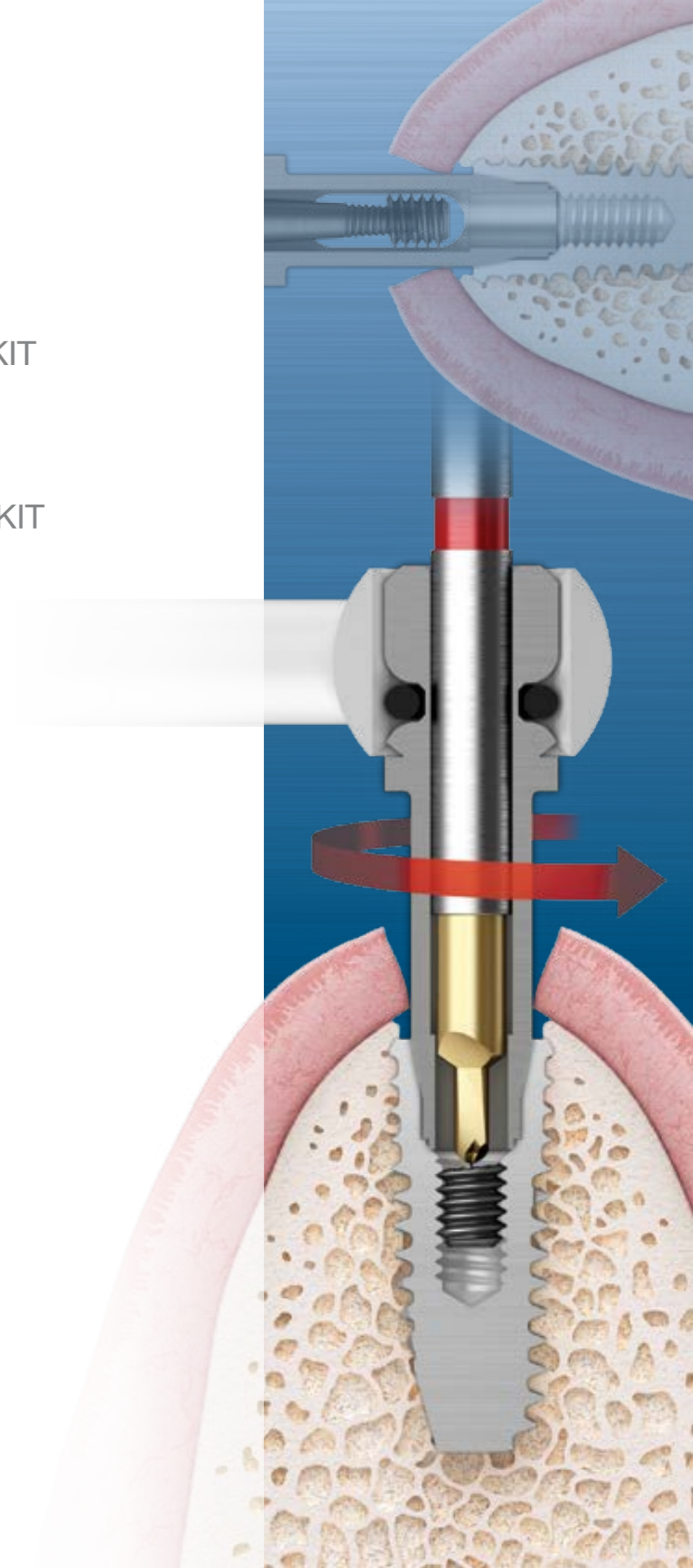
NOTE All of the used tools during the procedure should be disassembled and washed before storage. Re-sterilize the KIT immediately before the procedure to ensure the safest use (at 132°C, for 15 minutes). The quality of the KIT is warranted for 1 year after opening, and that of drills is warranted up to 50 times of use.

ESR KIT

Easy Screw Removal KIT

EFR KIT

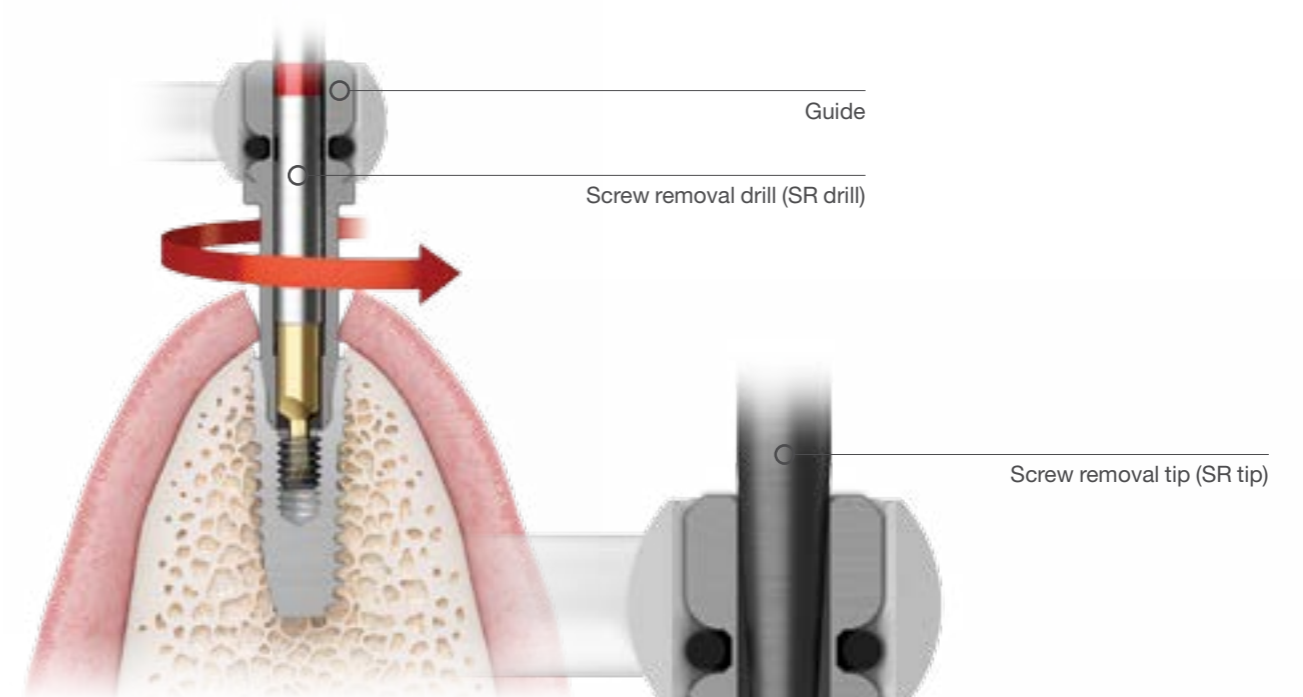
Easy Fixture Removal KIT



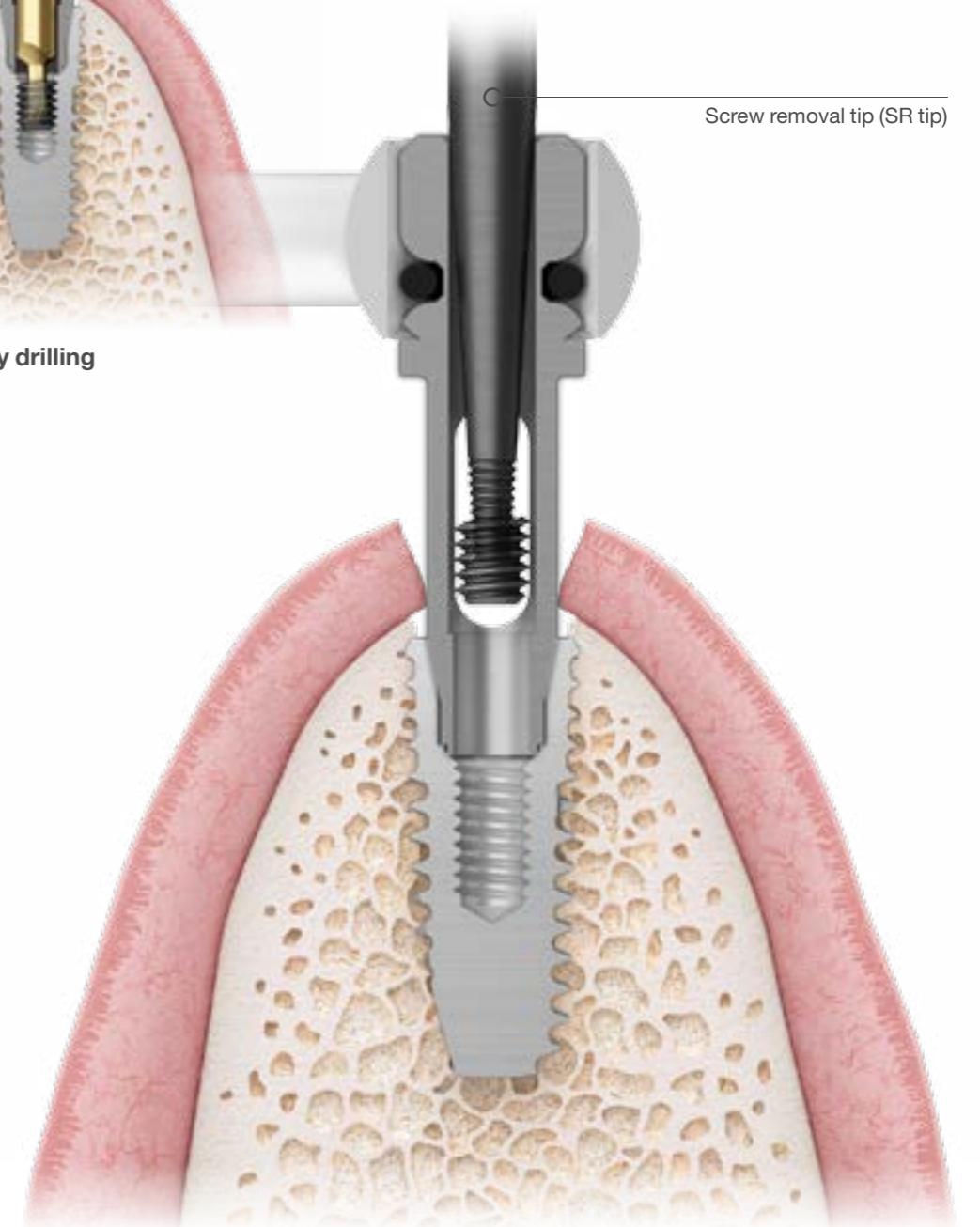
Easily and quickly removable ESR KIT

ESR KIT

Easy Screw Removal KIT



1. Forming a hole by drilling



2. Removing a fractured screw

01

Quick and easy removal in 2 steps

- High success rate of screw removal with simple and easy procedure

02

Excellent cutting efficiency and durability of SR drill

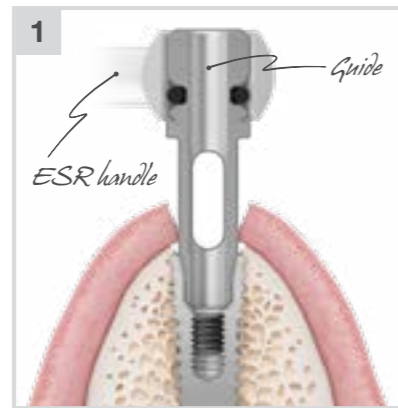
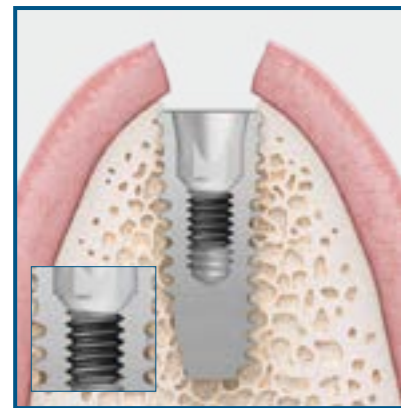
- Specialized material with high strength adopted in SR drill for outstanding cutting force
- Enhanced durability allows multiple uses of as many as 5 times.

03

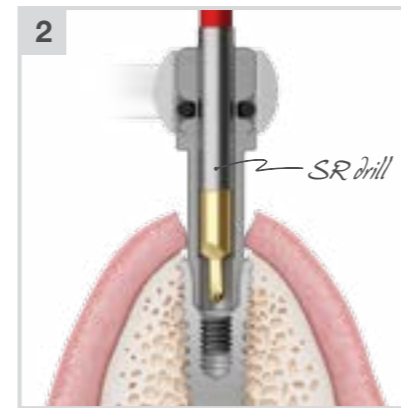
Capability to deal with a range of failed cases in prosthetic treatment

- Abutment screw fracture
- Abutment fracture
- Screw hex slip
- Smudging down of internal screw thread

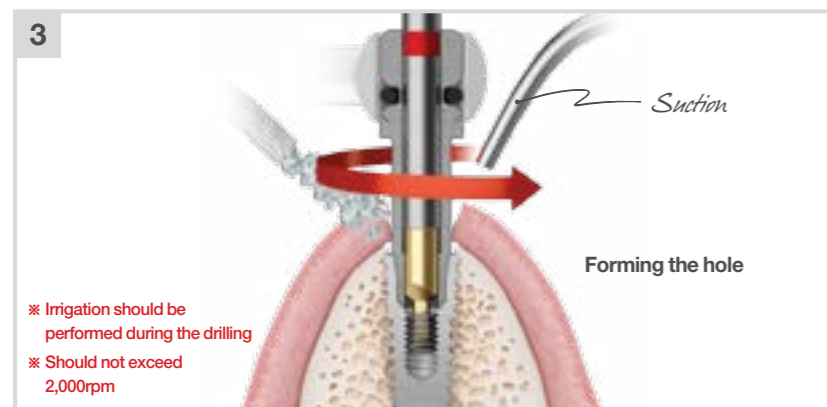
In case of **screw fracture**



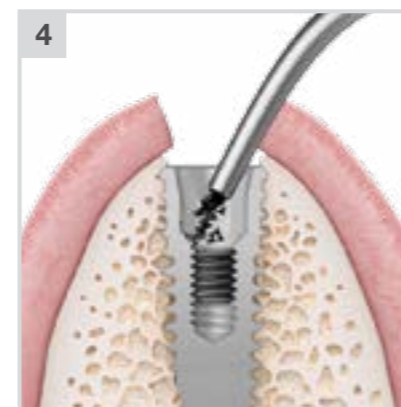
1 Connect the guide to the fixture and install the ESR handle on the guide.



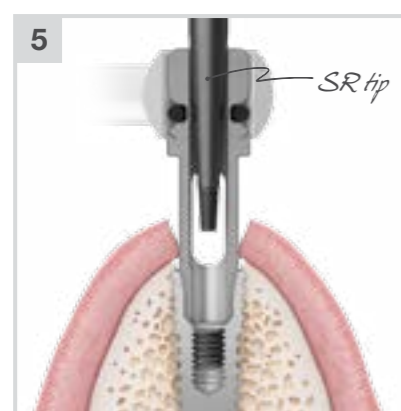
2 Install the SR drill on the hand-piece and insert into the guide.



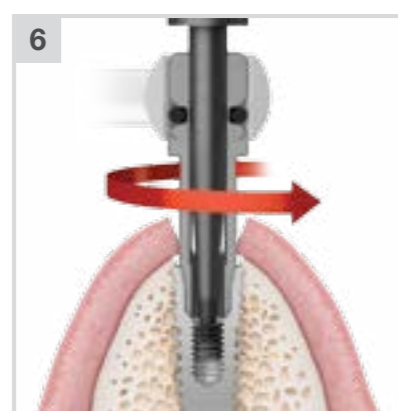
3 Drill in reverse at 1,200~1,500rpm, pumping mildly with force of 5~10N until the red line on the SR drill handle can no longer be seen.



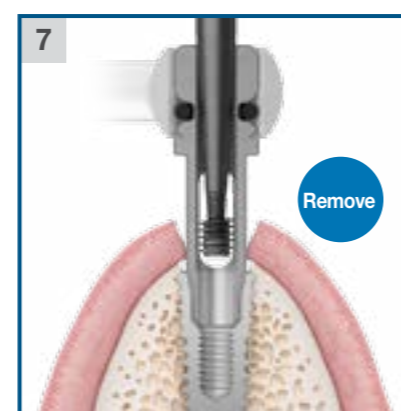
4 Remove any and all remaining chips through suctioning.



5 Install the SR tip on the Torque handle and insert the tip into the guide.

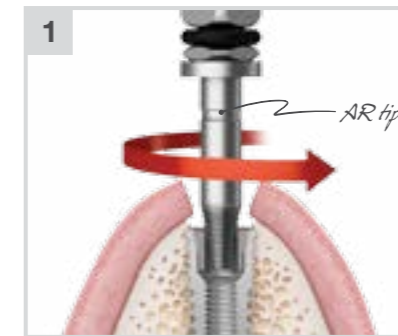
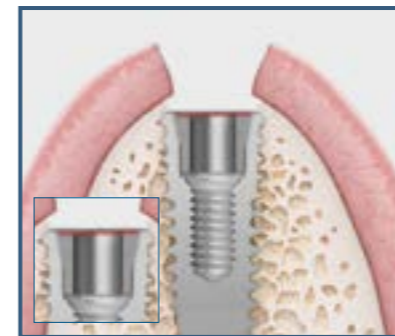


6 Remove the fractured screw through the slow reverse drilling of SR tip.

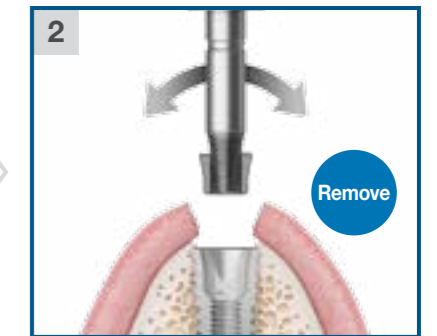


7 ※ Since unwanted substance including metal chips can be generated during the removal of the fractured screw, any and all remaining substances should be removed through sufficient irrigation and thorough suction after screw removal.

In case of **abutment fracture**

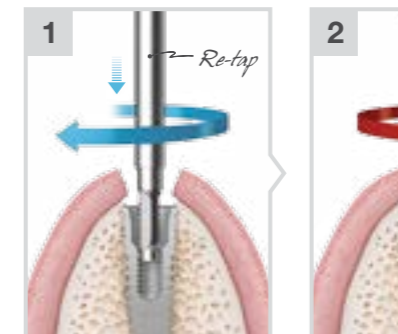
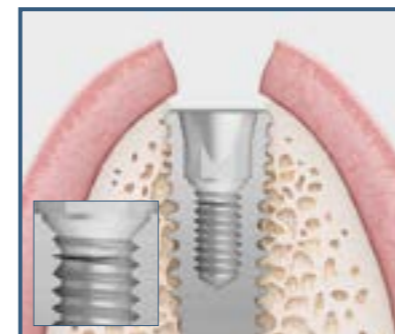


1 Install the abutment removal tip on the abutment screw hole and fix the tip tightly by rotating in the reverse direction.

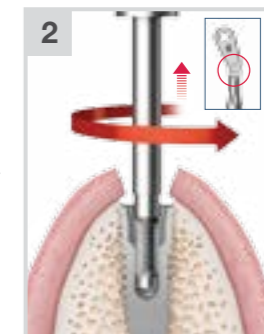


2 Tighten the tip in the abutment once again by connecting the ratchet wrench to the tip outward and remove the fractured abutment by wiggling the abutment with apparatus such as forceps.

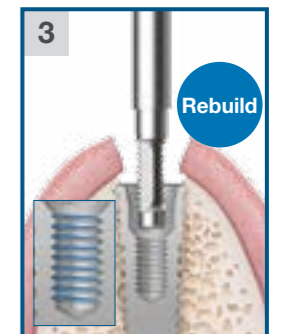
In case of **smudging down of the internal screw thread**



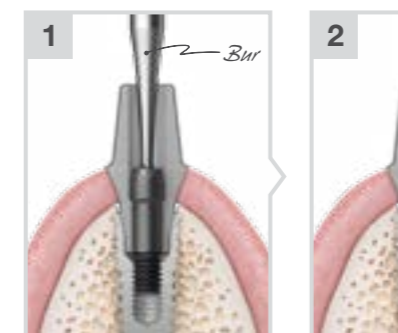
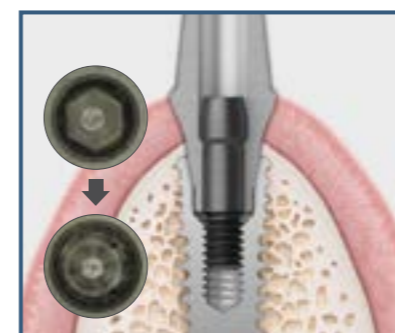
1 Connect Re-tap to the fixture, install a torque wrench on Re-tap, and apply slow tapping with 30 Ncm in the normal rotating direction.



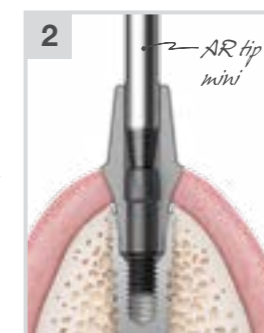
2 When the neck of the torque wrench is bent, remove the re-tap by reverse rotation.
3 Repeat normal rotation and reverse rotation until tapping is no longer possible and remove the re-tap.



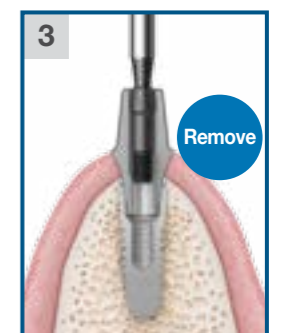
In case of **screw hex slip**



1 Forming a hole in the hex with $\varnothing 0.8$ round bur.

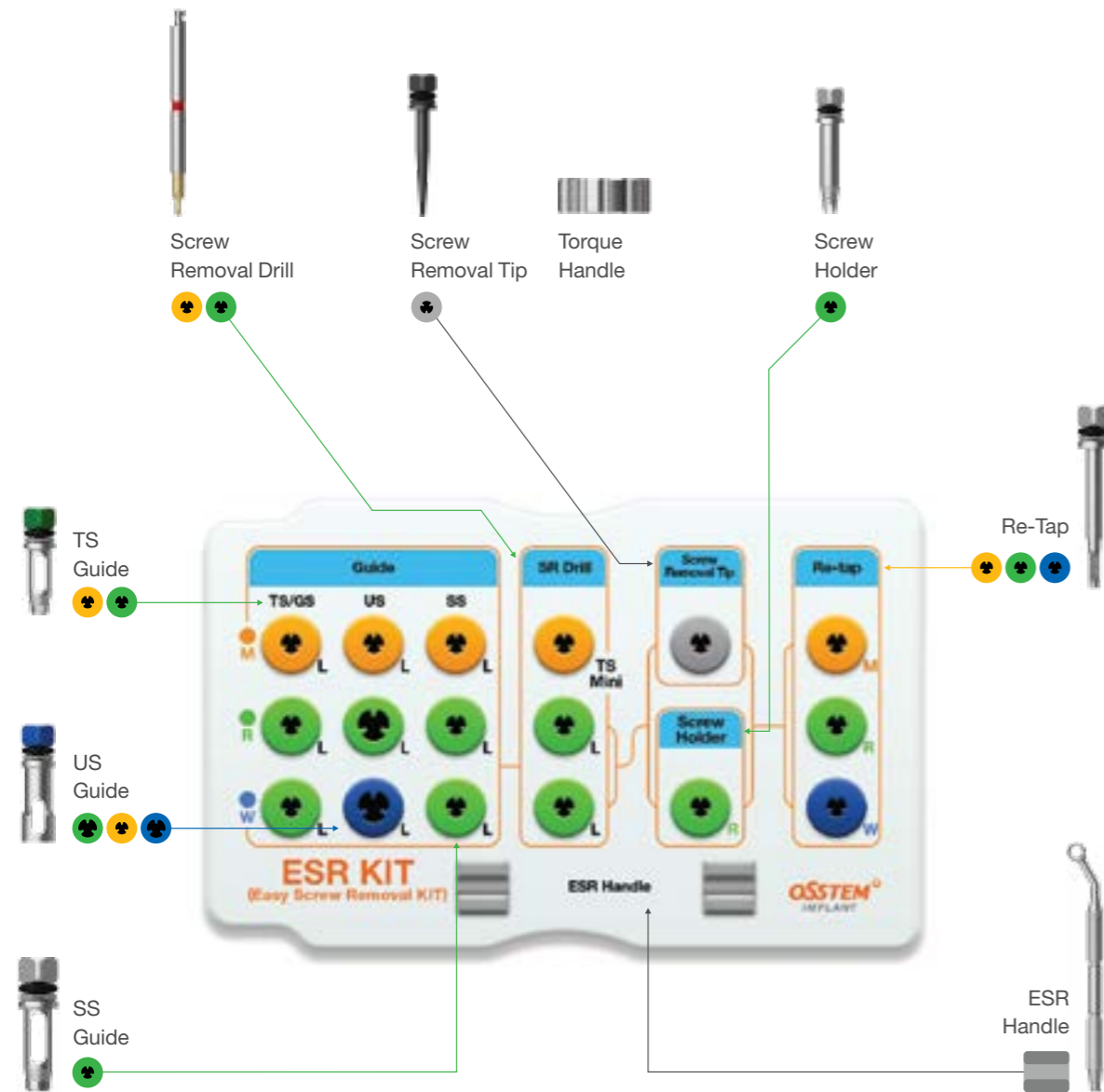


2 Connect the abutment removal tip mini to the screw hex hole with slip and remove the hex-slipped screw through reverse rotation.

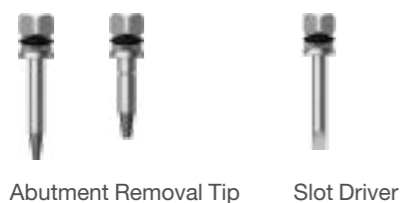


ESR KIT: OESRK

Compatible with **TSII / III** **SSII / III** **USII / III** **Ultra-wide**



Components of the lower plate

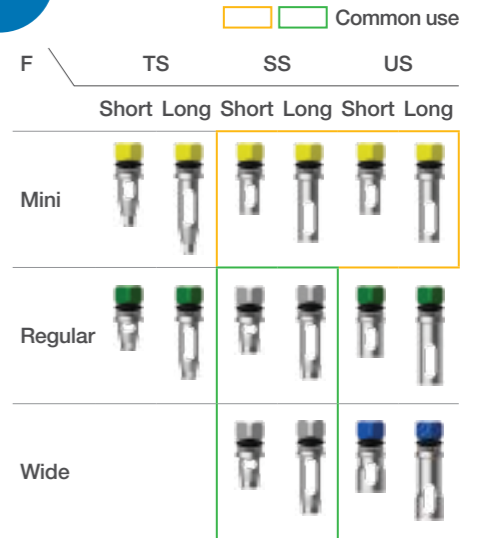


Guide

- The Guide can help reverse driver, screw removal drill (SR drill), and re-tap; for centering and to prevent shaking.
- Long type and short type may be selected depending on the inter-maxillary distance.
- Enables use in connection to the ESR handle
- F = Fixture

Spec upgrade

F	Type	TS (Hex)		SS (Octa)		US (Hex)	
		Short	Long	Short	Long	Short	Long
Mini		OGTMS	OGTML	OGUMS	OGUML	OGUMS	OGUML
Regular		OGTRS	OGTRL	OGSRS	OGSRL	OGURS	OGURL
Wide		-	-	OGSRS	OGSRL	OGUWS	OGUWL



ESR Handle

- Use to stabilize by connecting the guide



OARH

Screw Removal Drill (SR Drill)

Spec upgrade

- This drill is used to make a hole on the fractured screw and to remove it.
- It has to be used with the provided guide; remove the fractured chips by suction with irrigation on to the window.
- Long type and short type may be selected depending on the inter-maxillary distance.
- Drill until the red line on the handle part can no longer be seen.
- Recommended velocity: reverse rotation at 1,200~1,500rpm
- Maximum number of uses: 5



※ Should be used with the provided guide / Do not apply excessive force vertically / Do not immerse in hydrogen peroxide.

- Short: available as single product

· F = Fixture

L	F	Regular / Wide (GS / TS / SS / US)	
		Short	Long
		OSRD10S	OSRD10L

Screw Removal Tip (SR Tip)

- Insert the Screw removal tip into the hole made on the fractured screw and remove the screw using the Screw removal drill (SR drill) with reverse rotation.
- Rotating direction: reverse

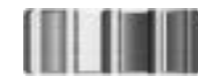
L		
Short	ORTS	
Long	ORTL	



Torque Handle

- Install the torque handle onto the connecting part of various devices such as Torque driver; connections can be made with rotation by hand.

L		
	MSTH	



Abutment Removal Tip (AR Tip)

- This tip can be used when the abutment mount is fractured and there are some remaining chips stuck in the fixture.
- Connect the abutment removal tip to the fractured abutment hole and fix with reverse rotation; once it is fixed tightly, remove the remaining chips by agitating with tools such as forceps.
- Mini can be used to remove a screw with hex slip - the slipped hex can be removed by reverse-rotating the Mini tip connected to the screw.

* Mini can remove a screw with hex slip

· F = Fixture

L	F	Mini	Regular
Short		OARTMS	OARTRS
Long		OARTML	OARTRL



Re-tap

- Re-tap can help rebuild the inner screw thread when the inner screw thread of the fixture is damaged and is not tightened to the screw.
- The thread can be rebuilt by the torque wrench or ratchet wrench in hand mode.
- F = Fixture

F	Mini (M1.6)	Regular (M2.0)	Wide (M2.5)
	ORTM	ORTR	ORTW



Slot Driver

- When the hex of fixtures such as healing abutment, cover screw, and abutment screw is damaged, and the driver is not applied properly, slot driver can be used after forming a slot with Ø0.8 bur.

L		
	OTSD07	



Screw Holder

- The screw holder can remove the fractured screw with partial protrusion.
- Color code allows easy recognition of different options.
- F = Fixture

F	Mini	Regular	Wide
	OSHM	OSHR	OSHW



Reverse Driver | Available as a single product

- Reverse driver is used to remove a fractured screw.
- It should be used with the guide compatible with the fixture.
- Once the red marking line becomes visible over the guide connected to the fixture, the fractured screw can be removed using a screw holder.
- In hand mode / rotating direction: reverse / Number of uses: 10 times

L	F	Mini	Regular / Wide
Short		-	ORVDRS
Long		ORVDML	ORVDRL



Transfer Abutment Separate Tool | Available as a single product

- This tool is used to remove a fixture trapped in non-hex-type transfer abutment on the contact of the morse taper.
- The edge of the body is used for mini type, and the second slot can be used for normal type.
- Remove the abutment screw, insert the separate tool body into the inner hole of the abutment, and remove the abutment with the body by tightening the driver with normal rotation. If separation is difficult, the tool can be connected to the ratchet wrench.

F	Driver	Body	Set
	TASD	TASB	TAST



EFR KIT for even better and complete removal

EFR KIT

Easy Fixture Removal KIT



01

Fixture can be easily removed in three steps

· The success rate of fixture removal is high with simple and easy procedure.

02

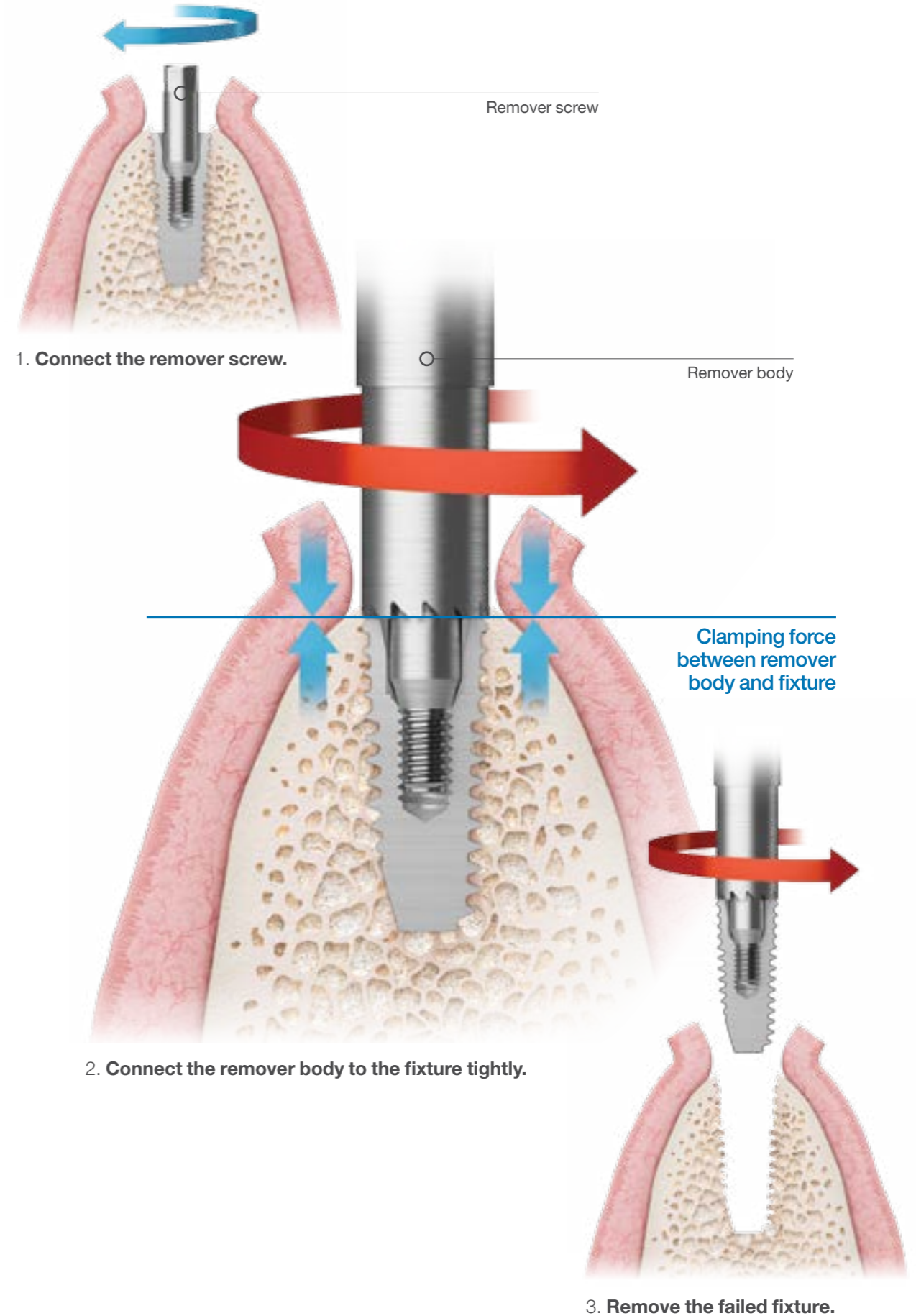
Fixture can be removed without bone loss

· Because the fixture is removed by reverse rotation, a new one of the same size can be immediately loaded.

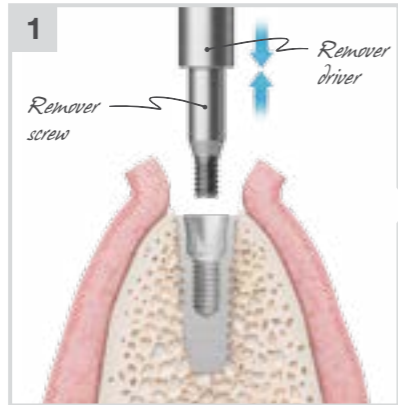
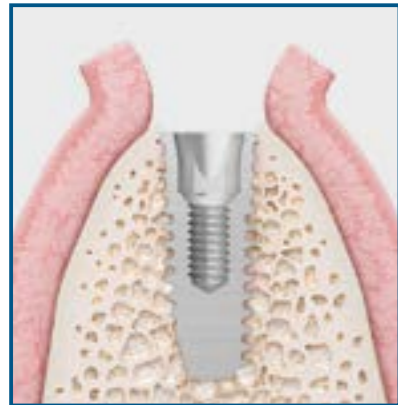
03

High removal torque can be applied

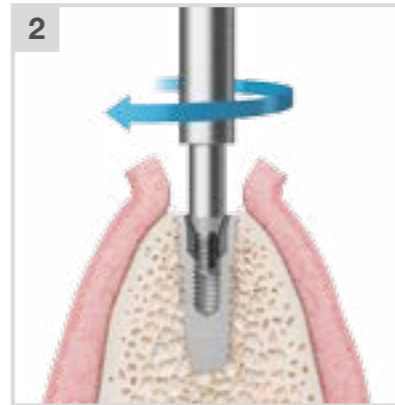
· With the improved removal tool, high removal torque of up to 400Ncm can be applied.



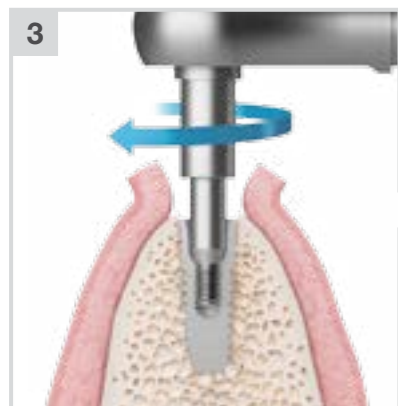
For fixture removal



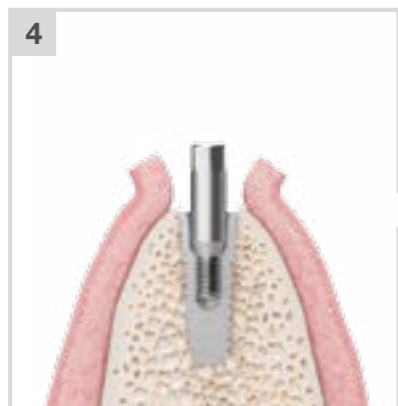
1 Select the remover screw option depending on the type and condition of the fixture to be removed (see the guide to remover screw selection) and install the selected remover screw on the screw driver.



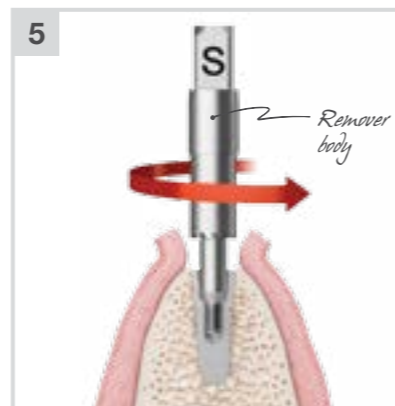
2 Connect the screw driver to the fixture preliminarily by hand with normal rotation.



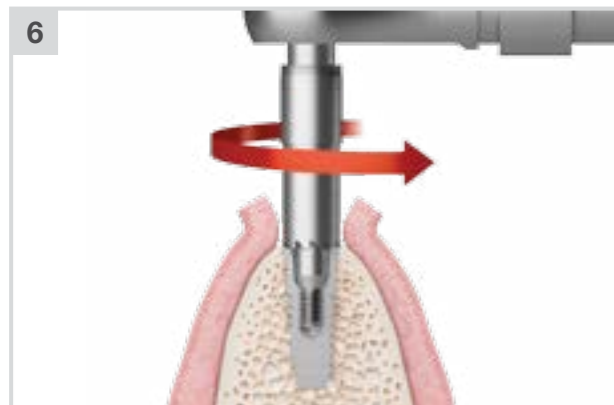
3 Complete the installation of remover screw on the screw driver using torque wrench with normal rotation at 100Ncm. (mini: 80Ncm)



4 The remover screw is now completely installed.

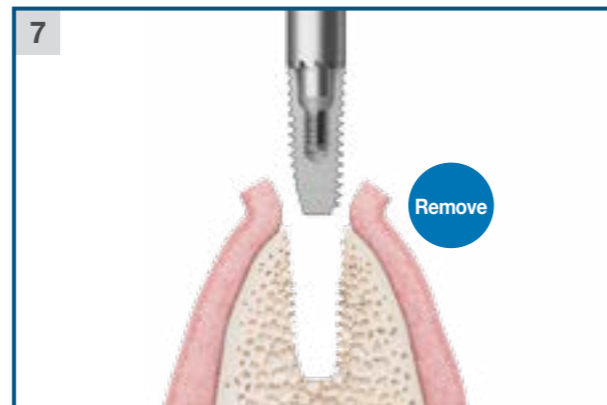


5 Select the proper type of remover body and preliminarily install on the remover screw by hand with reverse rotation.



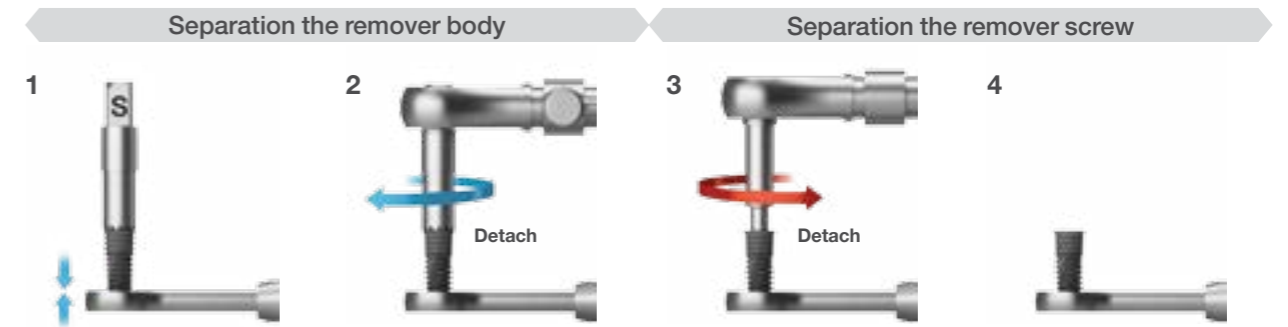
6 Mount the torque wrench on the remover body and rotate in reverse.
※ To prevent heat generation, irrigation to the remover body and fixture is needed.

NOTE In case of excessive force of 400Ncm or more, stop the operation immediately, disassemble the tool from the fixture, and remove the cortical bone with slight trephine drilling to make the removal process easier.



7 When apply the rotating torque, strong clamping force is generated between the remover body and the fixture, resulting in fixture removal. (removable without bone loss)

Disassemble the removal tool from the fixture.



1 Fix the removed fixture from the bone to the fixture wrench.
※ Select the hole depending on the cutting edge number and diameter of the fixture.

2 Connect the torque wrench to the remover body and disconnect the remover body with normal rotation.

3 Connect the screw driver to the remover screw, install the torque wrench, and separate them with reverse rotation.

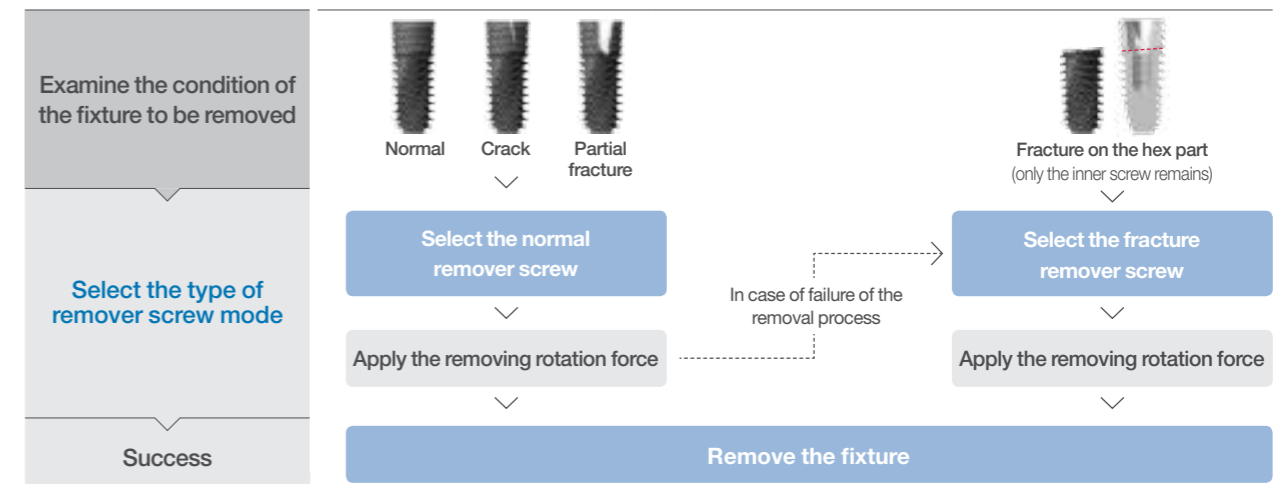
4 Remove the fixture from the fixture wrench.
※ When the fixture wrench is worn out, the disassembly process can be difficult. Therefore, if any wear is found on the wrench, replace with a new one.

Guide to remover screw selection

Select the type of screw

Identify the fixture system	TS			SS		US		
Identify the fixture size	Ø3.5	Ø4.0 ~ Ø4.5	Ø5.0 ~ Ø7.0	P4.8	P6.0	Mini	Regular	Wide
Select the type of remover screw	F3.5	F4.0 / 4.5	F5.0	P4.8 (Compatible with TS, too)	P6.0 (Compatible with TS, too)	F3.5 (Exclusive to US)	F4.0 / 4.5 (Exclusive to US)	F5.0 (Exclusive to US)
Color	Yellow	Green	Blue	Green	Blue	Yellow	Green	Blue

Select the mode

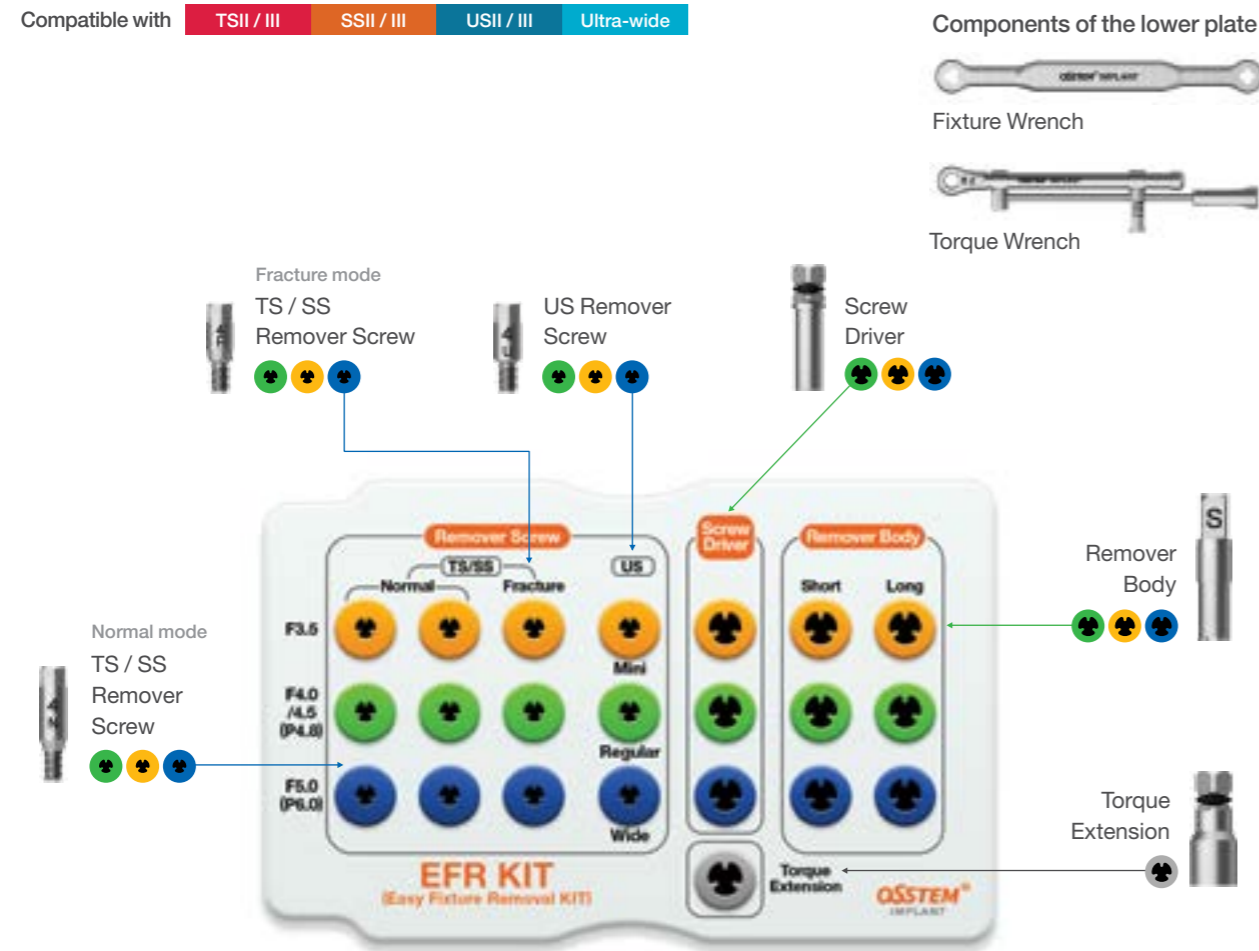


※ When fracture exists on the upper part of the fixture, remove the fixture by getting rid of the fractured part and applying torque with the remover body. If the fixture cannot be removed, repeat the removal process with the fracture remover screw.

※ A fixture whose inner screw is cracked cannot be removed with ESR Kit Fixture. In such case, trephine drill is recommended.

EFR KIT: OSFRK

Compatible with **TSII / III** **SSII / III** **USII / III** **Ultra-wide**



Components of the lower plate



Fixture Wrench



Torque Wrench

Remover Screw

- The remover screw works as an anchoring structure so that it can reverse-rotate the remover body connected and fixed to the fixture.
- Choose the right tool depending on the type and diameter of fixture to be removed (TS / SS / US, normal / fracture)
- Use fracture type remover screw to remove a fixture with cracks.
- Recommended tightening torque: regular / wide 100Ncm, mini 80Ncm
- Number of uses: 1 (Reusable for 1~2 times more when there is no product deformity)
- F = Fixture • P = Platform

Spec upgrade



Type	F/P	Mini	Regular	Wide
		(Ø3.5 / -)	(Ø4.0~4.5 / P4.8)	(Ø5.0 / P6.0)
TS / SS	Normal	FRSM35	FRSR40	FRSW50
	Fracture	FRSM35F	FRSR40F	FRSW50F
US	-	FRSM35US	FRSR40US	FRSW50US

Screw Driver

- Connect the remover screw to the fixture / Fixable driver
- Recommended tightening torque: regular / wide 100Ncm, mini 80Ncm
- F = Fixture

F	Mini	Regular	Wide
	FRSDM23	FRSDR25	FRSDW30



Remover Body

- Remover body is a tool to apply removing torque onto the fixture by being connected to the remover screw.
- Select the proper option depending on the diameter of fixture to be removed.
- Number of uses: 1 (Reusable for 1~2 times more when there is no product deformity)

Spec upgrade



F	Mini	Regular	Wide
Short	FRBM35S	FRBR40S	FRBW50S
Long	FRBM35L	FRBR40L	FRBW50L

Torque Extension

- The length of screw driver and remover body (10mm) can be extended.



Torque Wrench

- Torque wrench is used to tighten the screw driver and remove the fixture using the remover body.
- Up to 400Ncm (bearing 80 / 100 / 200 / 300 / 400Ncm indication marks) of torque can be applied.
- Pull the bar to the middle of the mark of the intended torque value and apply the torque.
- The tools should be stored upon rinsing and sterilizing after use

Spec upgrade



Fixture Wrench

- This wrench is used to remove the fixture from the remover body.

