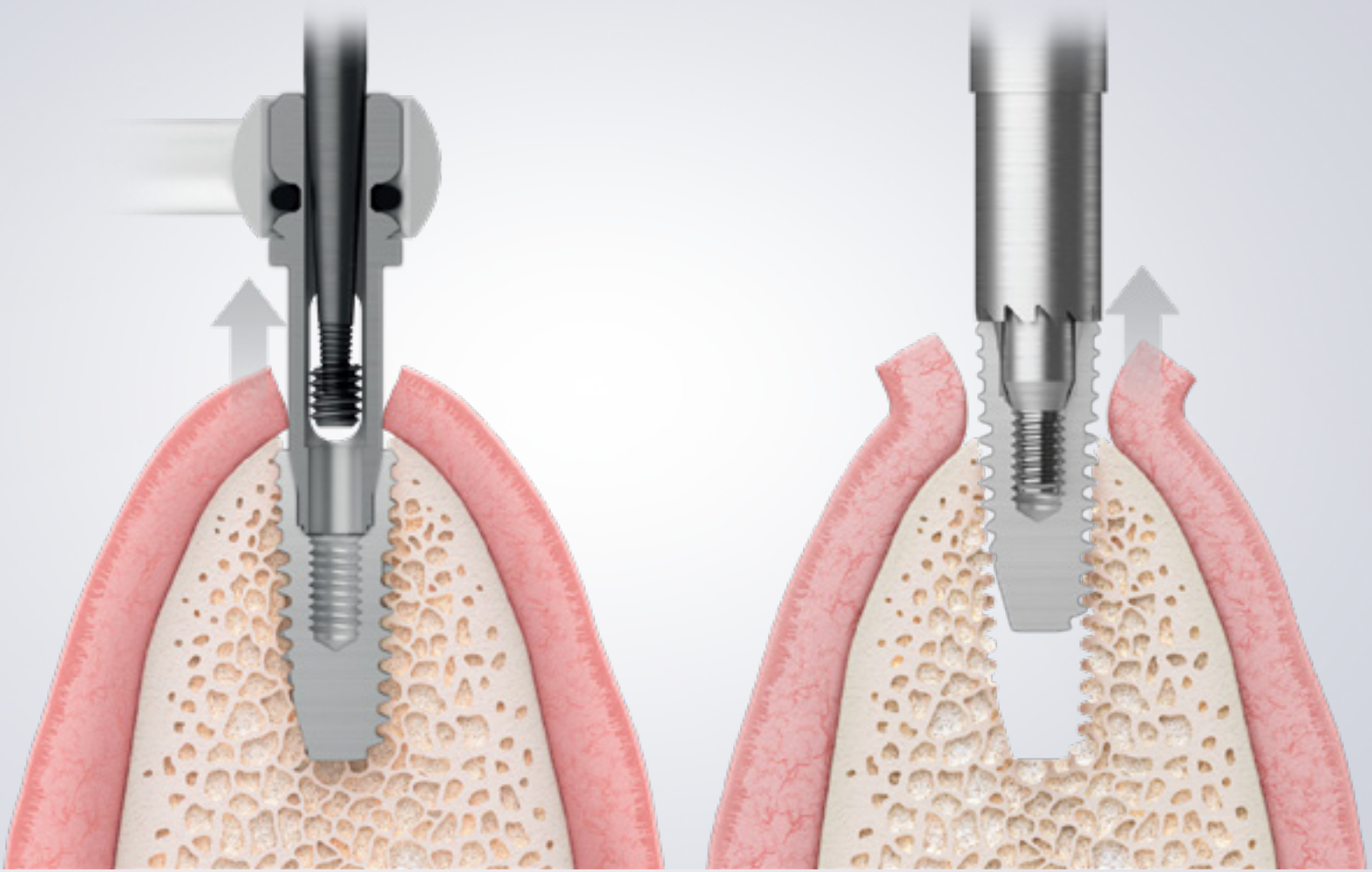




RESCUE KITS

ESR - Broken Screw Removal Kit

EIR - Atraumatic Implant Removal Kit

HIOSSEN
IMPLANT

ESR Kit

Broken Screw Removal Kit



SR Tip

SR Drill

AR Tip

Achieve simple and efficient removal in just two easy steps

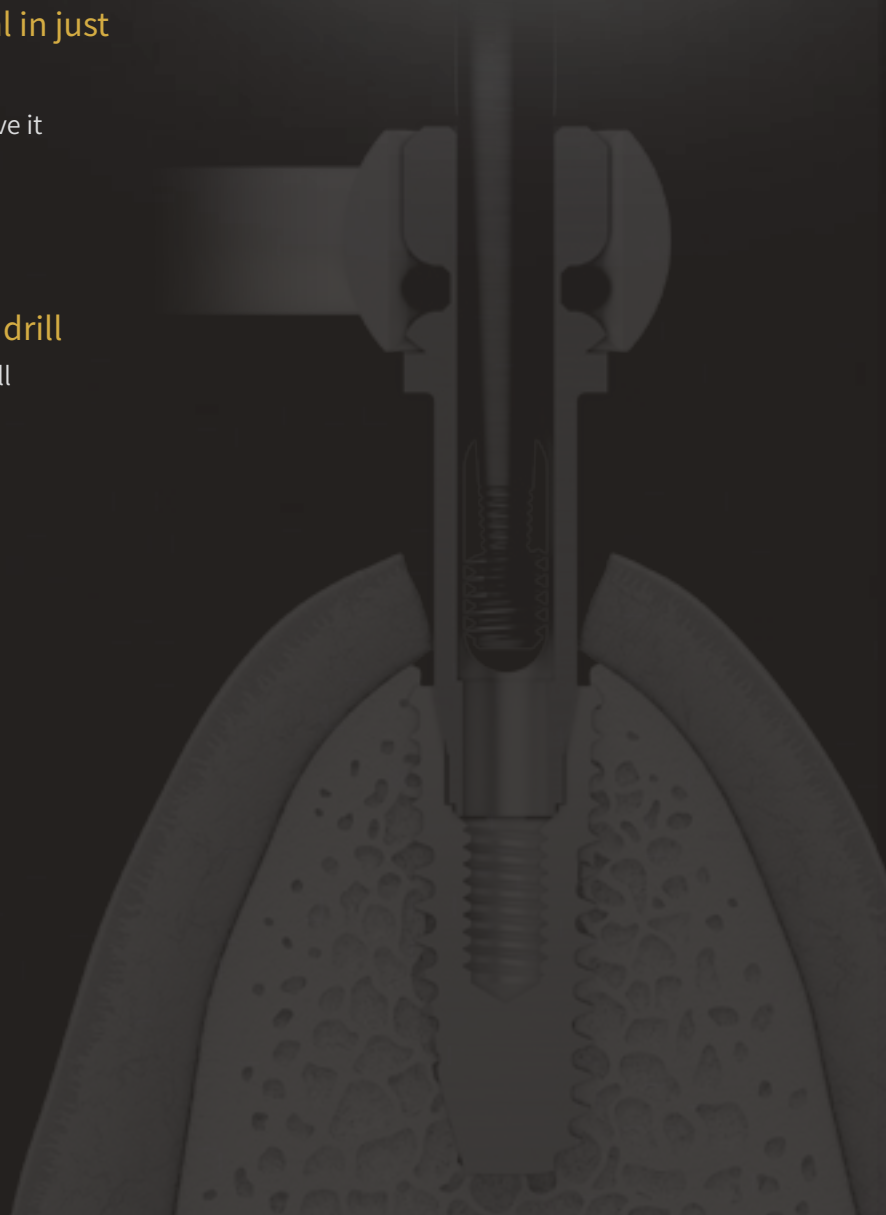
- Create a hole on the stripped screw and remove it

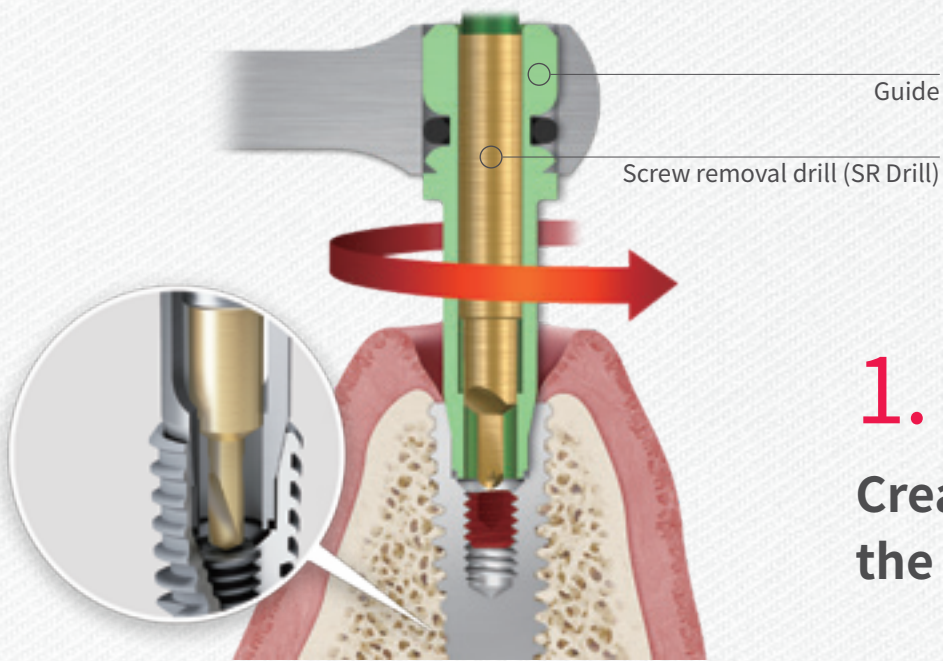
Excellent cutting performance of SR drill

- Highly wear-resistant Tungsten Carbide SR drill

Various applications for prosthetic treatment failures

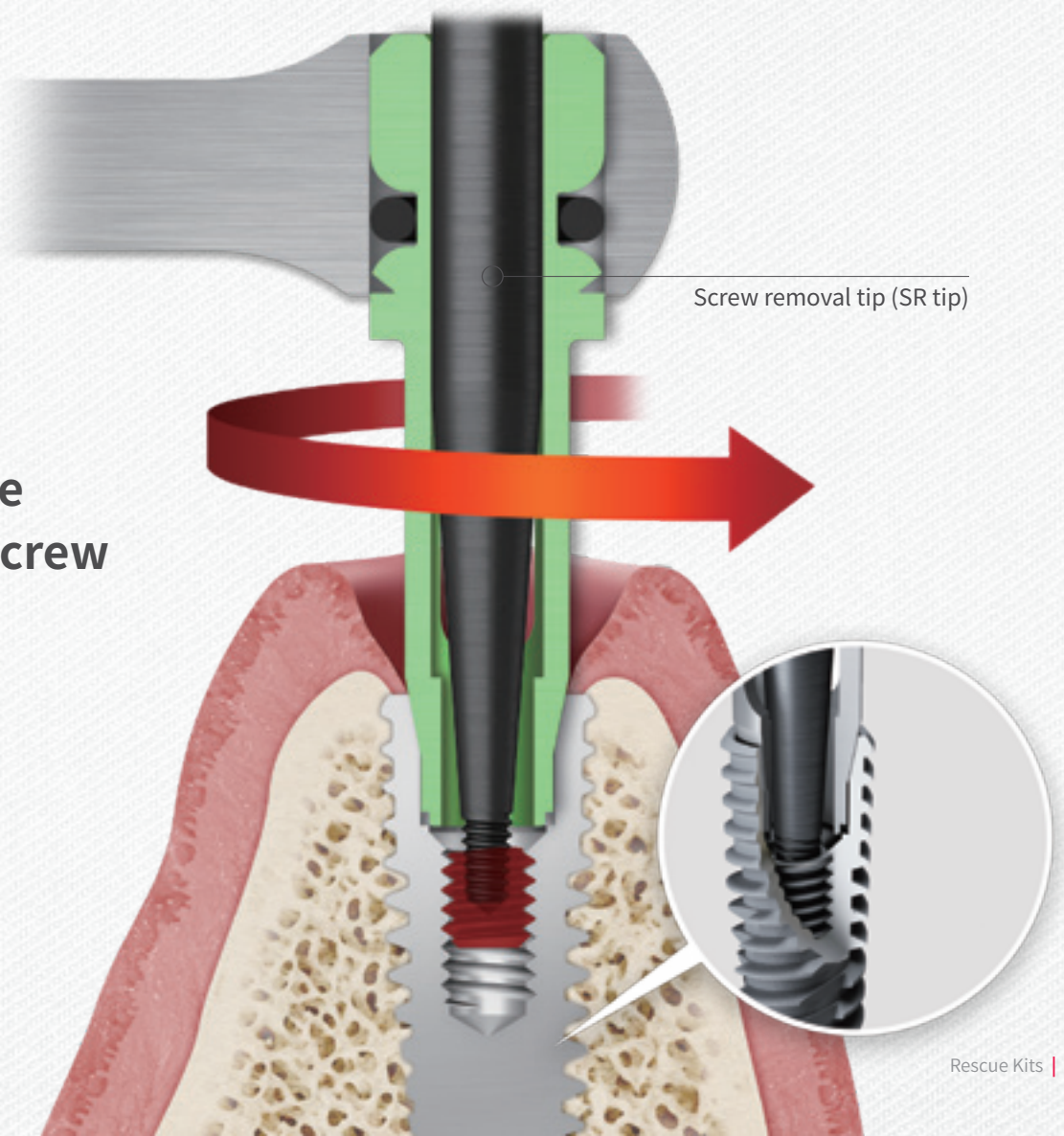
- Fractured abutment screw
- Abutment fracture
- Abutment screw hex damage
- Damaged internal screw thread





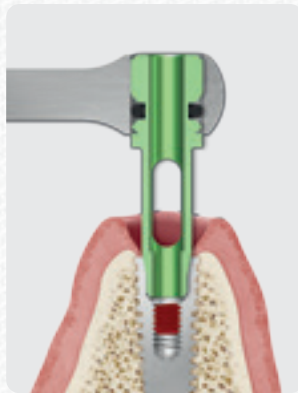
1.
**Create a hole on
the stripped screw**

2.
**Remove the
fractured screw**

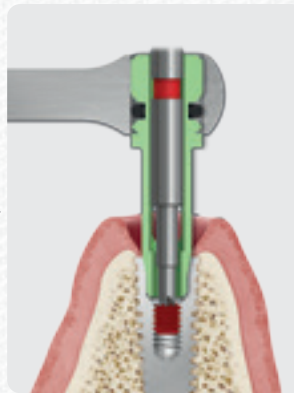


Removal process

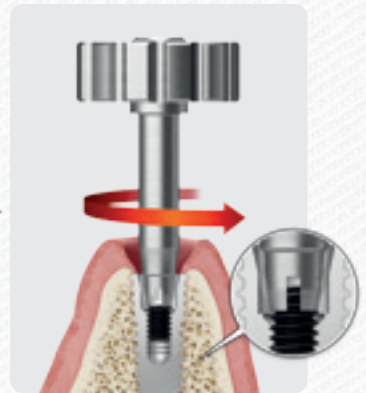
Removal of a Fractured Screw



Ensure that the Guide is inserted into the implant, being careful to align the hex of the guide with the internal hex of the implant.

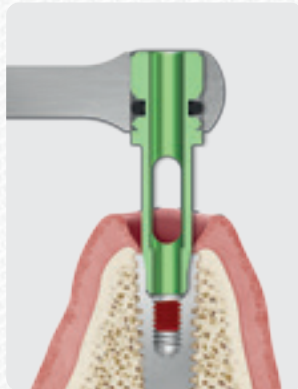


Insert the Reverse Drill into the Guide and rotate counterclockwise to disengage the screw.

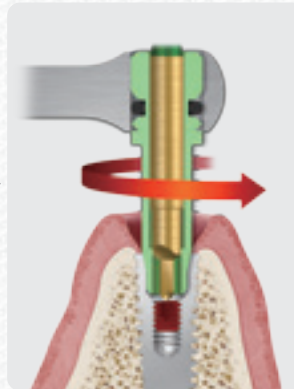


Insert the screw holder on the reverse drill and remove the fractured screw by rotating counterclockwise.

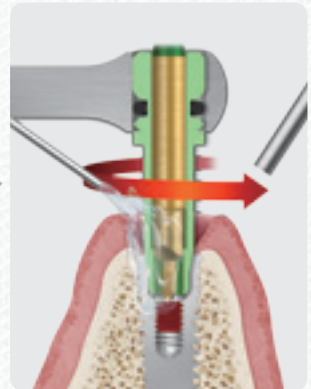
If the fractured screw cannot be removed using a Reverse Drill...



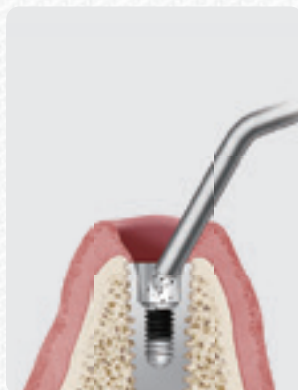
Ensure that the Guide is inserted into the implant, being careful to align the hex of the guide with the internal hex of the implant.



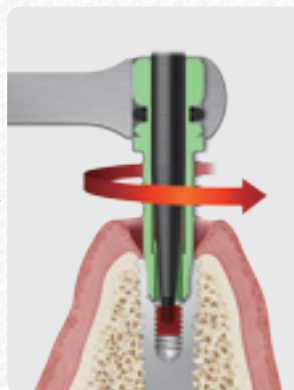
Once the ESR guide handle is properly positioned, attach the SR drill to the handpiece. Ensure that the SR drill makes contact with the remaining portion of the screw.



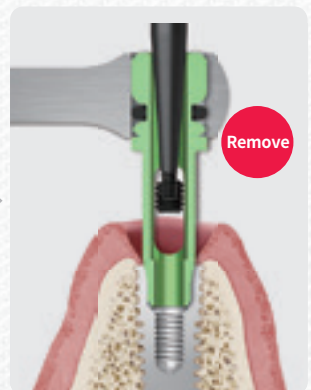
Apply gentle pressure and rotate the drill in a counterclockwise direction at a drilling speed of 1200~1500rpm. Make sure to use irrigation and suction during the process. Continue drilling until the colored marking on the SR drill is no longer visible.



When complete, remove the guide and suction through any metal debris.

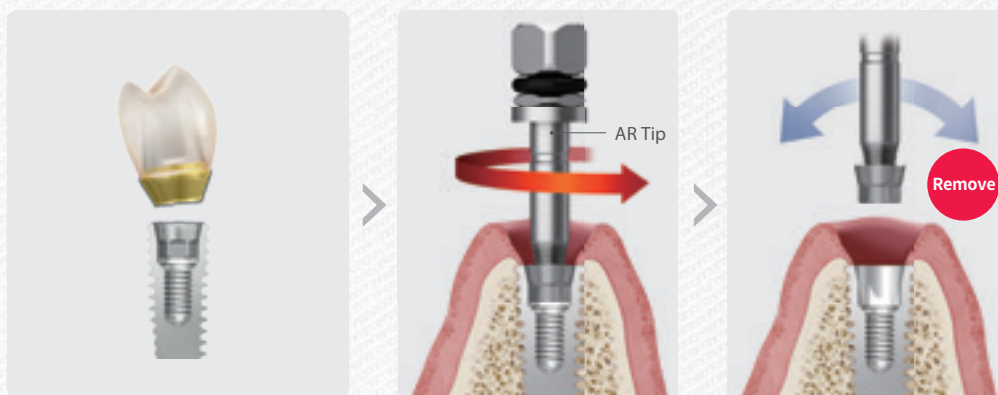


With the screw securely engaged, rotate the tool in a counterclockwise direction until the screw is completely disengaged from the threads of the implant.



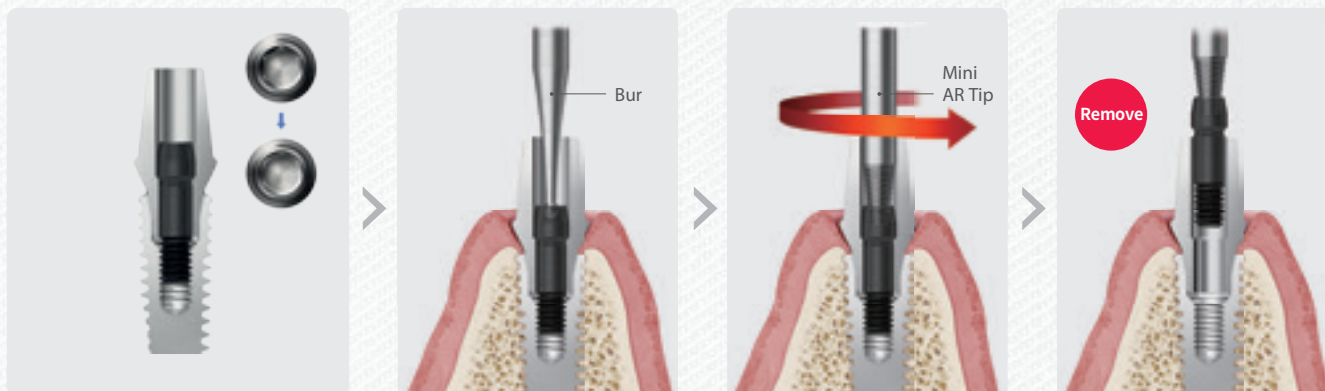
During the screw removal process, metal debris it is important to remove them properly. Use irrigation and an air blast to clean and remove the metal debris after the screw has been successfully removed.

Removal of a Fractured Abutment



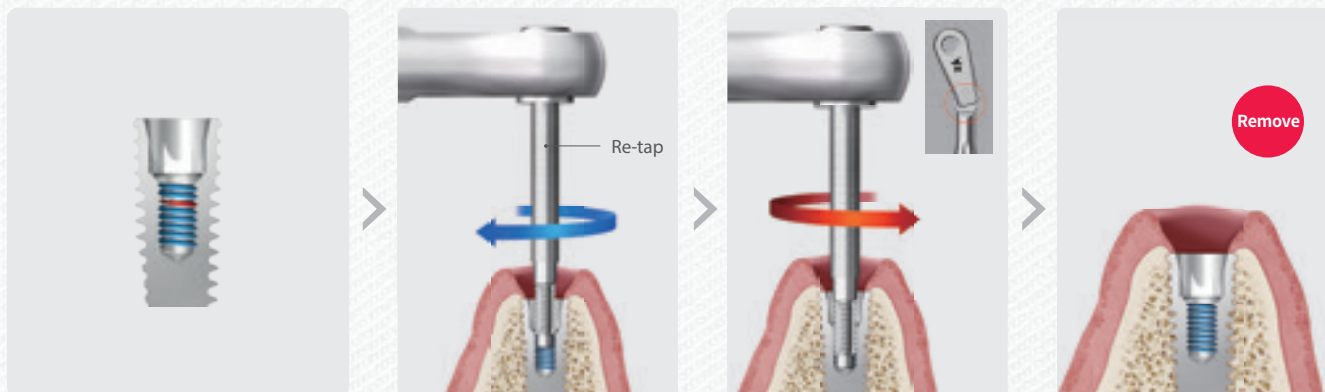
1. Insert the Abutment Removal (AR) tip into the abutment screw insert. Rotate the tip counterclockwise.
2. Grasp the AR tip with forceps, then gently pull and wiggle it left and right to remove the fractured abutment from the implant.

Screw Thread Retrieval



1. Create a hole with Ø0.8 round bur in the abutment screw hex.
2. Connect the mini Abutment Removal (AR) tip to the screw hex hole and remove the abutment screw counterclockwise.

Abutment Screw Hex Damage



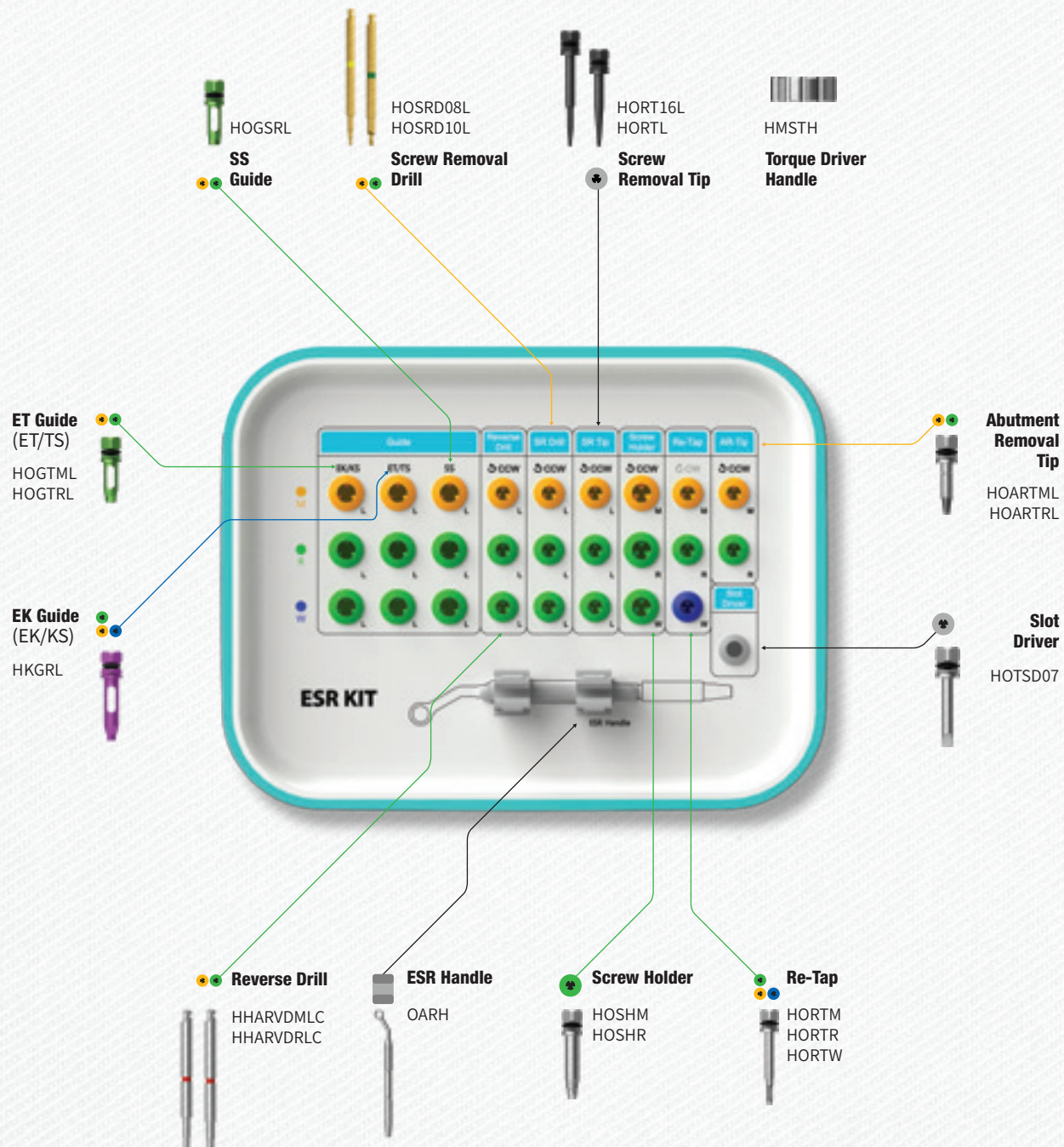
Verify the implant is completely clean and free of debris.

1. Place the re-tap into the implant and attach the torque wrench. Apply gentle and gradual clockwise rotation to the re-tap using a torque of 30Ncm. This will help restore the threads within the implant for subsequent steps.
2. In the event that the neck of the torque wrench is bent, proceed to remove the re-tap by rotating it counterclockwise to safely and effectively remove it from the implant.
3. Repeat the step using a new Re-tap drill until the tip of the drill reaches the bottom. Once the desired depth is achieved, carefully remove the Re-tap drill from the implant.

ESR KIT SURGICAL INSTRUMENTS

ESR SIMPLE KIT : HKESRK

Compatible with **EK (KS) System** **ET (TS) System** **SS System**



ESR FULL KIT SURGICAL INSTRUMENTS

ESR FULL KIT : HESRFK_US

Compatible with

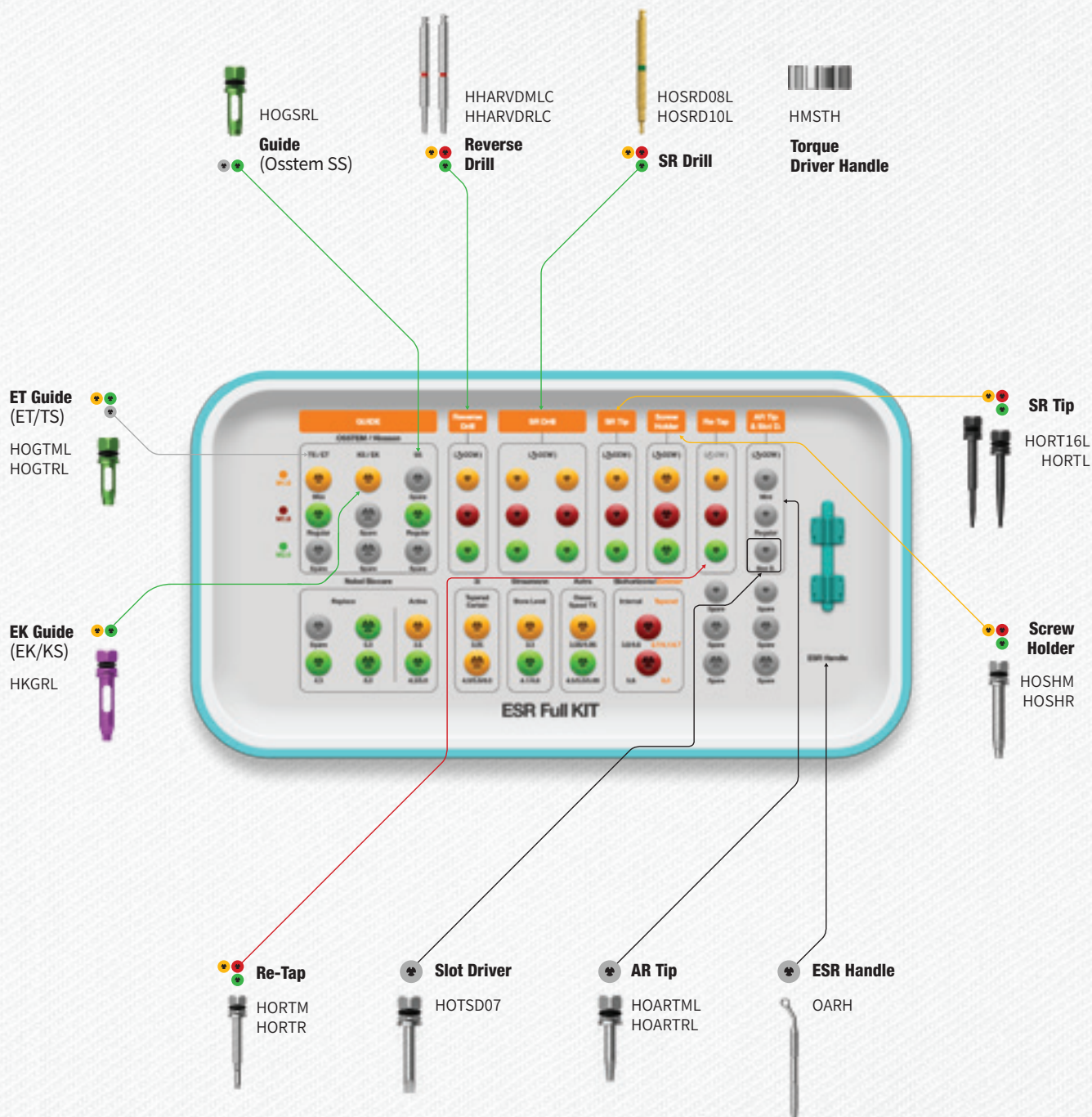
EK (KS) System

ET (TS) System

SS System

Nobel Biocare Active/Replace / **Straumann** Bone Level / **Astra** Osseo Speed TX

3i Full OSSEOTITE Tapered Certain / **Zimmer** Tapered / **BioHorizons®** Internal



Guide

- Connect the reverse driver, SR drill, and Re-Tap drill directly to the implant to avoid any wobbling and ensure a stable connection during their use
- Long and short types are available depending on the intermaxillary distance
- Check the implant system and diameter before choosing the Guide
- Use with ESR handle
- Recommended number of use: up to 10 times

Osstem						
Type	Length	C /	Mini	Regular	Wide	Image
ET(TS)	Short		HGTMS	OGTRS	-	
	Long		HOGTML	HOGTRL	-	
EK(KS)	Short		-	OKGRS	-	
	Long		-	HKGRL	-	
SS	Short		-	HGSRS	HGSRS	
	Long		-	HOGSRL	HOGSRL	

Nobel Biocare							
Type	Length	F /	Ø3.5	Ø4.3	Ø5.0	Ø6.0	Image
Active	Short		HGNA01S	HGNA02S	HGNA02S	-	
	Long		HGNA01L	HGNA02L	HGNA02L	-	
Replace	Short		-	HGNR02S	HGNR03S	HGNR04S	
	Long		-	HGNR02L	HGNR03L	HGNR04L	
Type	Length	F /	Ø3.3	Ø3.75	Ø4.0	Ø5.0	
MKIII	Short		HGUMS	HGURS	HGURS	HGUWS	
	Long		HOGUML	HOGURL	HOGURL	HOGUWL	

Straumann							
Type	Length	F /	NC (3.3)	RC (4.1)	RC (4.8)		Image
Bone Level	Short		HGSB01S	HGSB02S	HGSB02S		
	Long		HGSB01L	HGSB02L	HGSB02L		
Type	Length	F /	RN (3.3 / 4.1 / 4.8)		WN (4.8)		
Roxolid SLActive	Short		HGSTRS		HGSTRS		
	Long		HGSTRL		HGSTRL		

Astra					
Type	Length	F /	Small (3.5 S / 4.0 S)	Large (4.5 / 5.0 / 5.0S)	Image
Osseo Speed TX	Short		HGA001S	HGA002S	
	Long		HGA001L	HGA002L	

Zimvie (Zimmer)					
Type	Length	F	Green (3.7 / 4.1 / 4.7)	Green (6.0)	Image
Tapered	Short		HGZB01S	HGZB02S	
	Long		HGZB01L	HGZB02L	

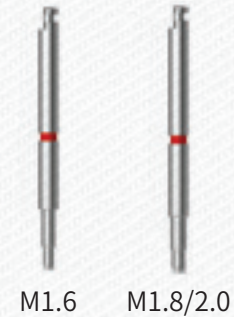
BioHorizons					
Type	Length	F	Yellow / Green	Blue	Image
Internal (Tapered Bone Level)	Short		HGZB01S	HGZB02S	
	Long		HGZB01L	HGZB02L	
Type	Length	F	Ø3.5	Ø4.0 / 5.0 / 6.0	
External	Short		HGUMS	HGURS	
	Long		HOGUML	HOGURL	

3i					
Type	Length	F	3.25	4.0 / 5.0 / 6.0	Image
Full Osseotite Tapered Certain	Short		HGIF01S	HGIF02S	
	Long		HGIF01L	HGIF02L	
Full Osseotite Tapered	Short		-	HGURS	
	Long		-	HOGURL	

Reverse Drill

- To be used in conjunction with the guide to remove a fractured screw
- If the red marking of the reverse driver is still visible on the guide, use a screw holder to remove the fractured screw
- Direction of Rotation: Counterclockwise
- Recommended number of usage: Up to 10 times

L	Type	M1.6	M1.8	M2.0
	Short	-	HARVDRSC	HARVDRSC
	Long	HARVDMLC	HARVDRLC	HARVDRLC



ESR Handle

- Used to secure the guide to the implant

OARH



Screw Removal Drill (SR Drill)

- Used to create a hole in the fractured screw
- To ensure proper connection of the guide and utilize irrigation and suction to effectively eliminate any debris
- Available in long and short lengths for different intermaxillary distances
- Drill until the colored marking on the drill is no longer visible through the guide
- Recommended speed: 1,200~1,500 rpm (counterclockwise)
- Connect the guide before use/Do not apply excessive vertical force/Do not clean with hydrogen peroxide
- Single use only

L	Type	M1.6	M1.8	M2.0
	Short	HSRD08S	HSRD09S	HSRD10S
	Long	HOSRD08L	HSRD09L	HOSRD10L



Screw Removal Tip (SR Tip)

- Removes a fractured screw by engaging into the hole created by the Screw Removal Drill
- Rotating direction : Counterclockwise
- Single use only

L	F	M1.6	M1.8	M2.0
Short		HRT16S	HRT18S	HRTS
Long		HORT16L	HRT18L	HORTL



Torque Driver Handle

- Manual handle for SR Tip, AR Tip, screw holder

HMSTH



Abutment Removal Tip (AR Tip)

- Removes fractured or jammed abutments and mounts from the implant
- Insert into the fractured abutment hole, turn counterclockwise, and rock back and forth to loosen and remove it with forceps
- Mini : it can be used to remove a screw with a stripped hex
 - To remove the screw, engage the tip into the stripped hex and rotate it counterclockwise

L	F	Mini	Regular
Short		HARTMS	HARTRS
Long		HOARTML	HOARTRL
Ex.Long		HARTMEL	HARTREL



Re-tap

- Connect it to a torque wrench or ratchet wrench to re-thread the internal connection of an implant by hand
- Connect it to a torque wrench or ratchet wrench to re-thread by hand

Type	M1.6	M1.8	M2.0
	HORTM	HORTR18	HORTR



Slot Driver

- Used to unscrew a screw, healing abutment, cover screw or abutment screw with a stripped hex after creating a slot with a Ø0.8 bur

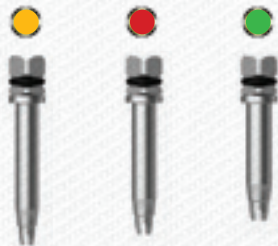
HOTSD07



Screw Holder

- Grasps onto a protruding fractured screw
- Color-coded for easy recognition
- Rotation direction : Counterclockwise

Type	M1.6	M1.8	M2.0
	HOSHM	HSHR18	HOSHR



Reverse Driver

- To be used in conjunction with the guide to remove a fractured screw
- Insert until the red marking is in the guide and turn counterclockwise to remove the screw
- Use manually/rotate counterclockwise
- Recommended number of use: Up to 10 times
- Color-coded for easy recognition

L	F	Mini	Regular/Wide
Short	-	-	HRVDRS
Long		HRVDML	HRVDRL



Transfer Abutment Separate Tool

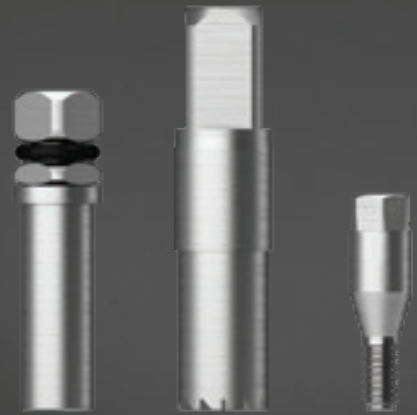
- Remove jammed abutment of non-hex type transfer abutment
- The body's first groove is for mini platform abutments; the second groove is for regular platform abutments
- After removing the abutment screw, insert the body into the inner hole of the abutment, rotate the driver clockwise. If the separation of is difficult, use after connecting a ratchet wrench to the driver

F	Driver	Body	Set
	HTASD	HTASB	HTAST



EIR Kit

Atramaucic Implant Removal Kit



Screw
Driver

Remover
Body

Remover
Screw

Remove failing or misplaced implants in only 3 steps

Implant removal with minimal bone loss

Up to 400Ncm removal torque can be applied

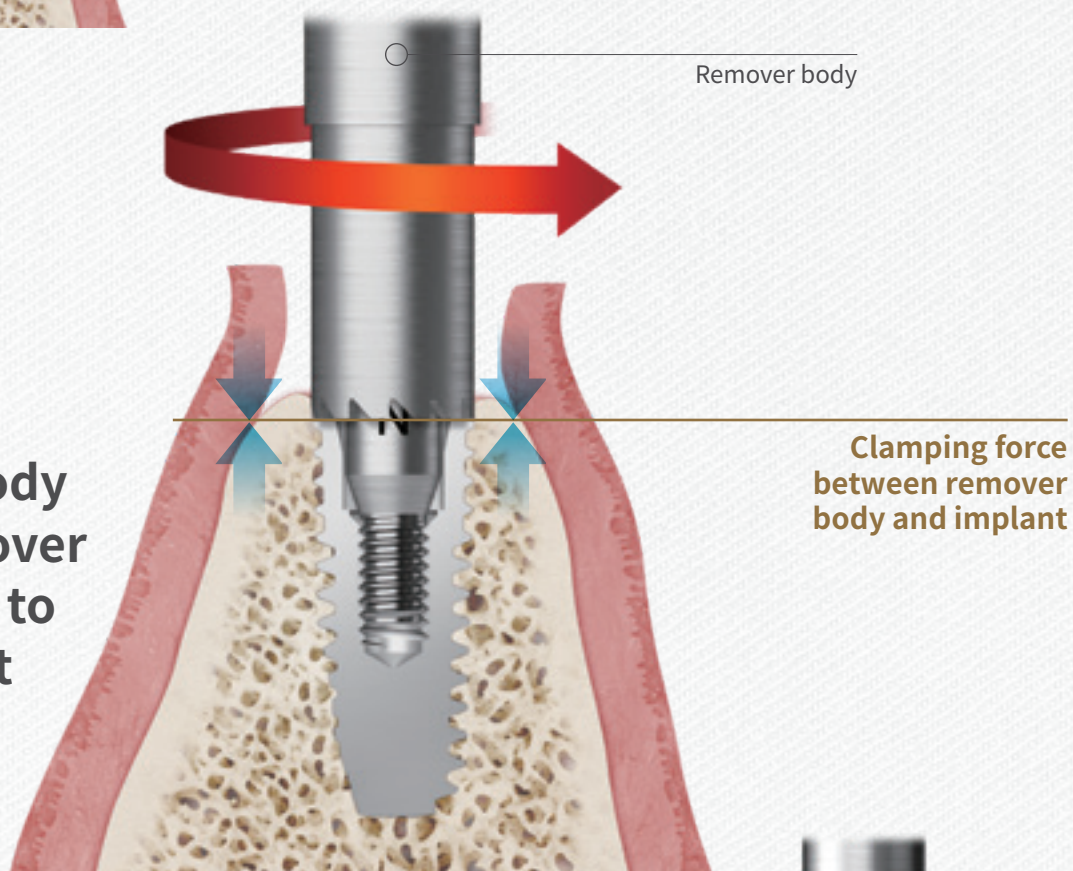


1.

Connect the remover screw
on the implant

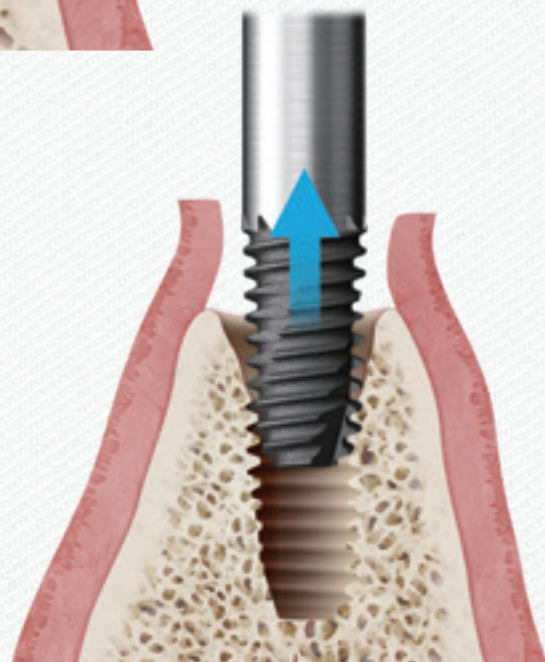
2.

Engage the
remover body
to the remover
screw then to
the implant



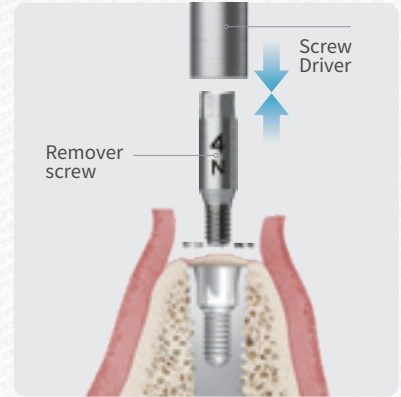
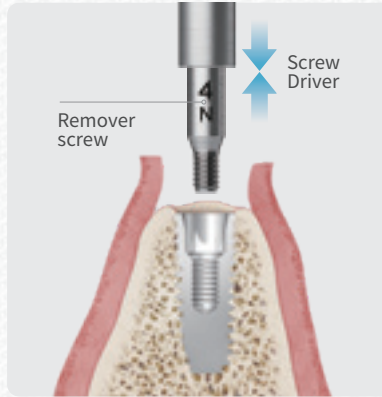
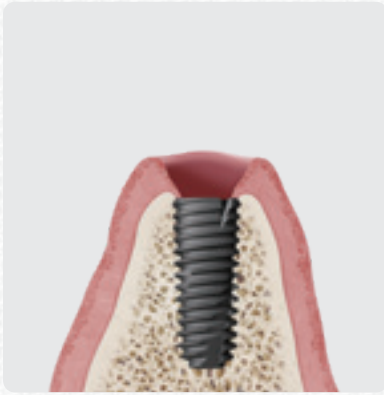
3.

Remove the
implant



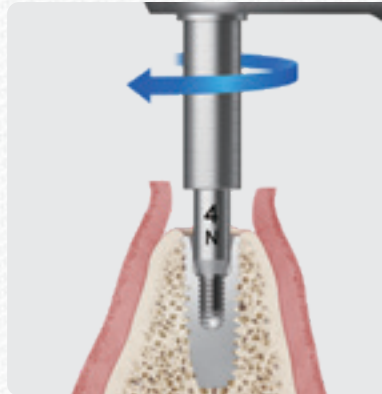
Implant Removal Process

| Implant Removal Process



Select the remover screw that matches the implant system ET(TS)/SS/EK(KS). Select the respective remover screw depending on the condition of the implant (normal vs. fracture, refer to the remover selection guideline).

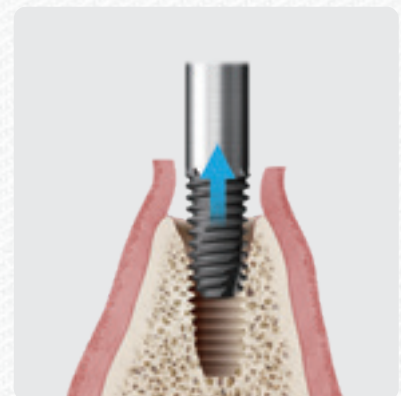
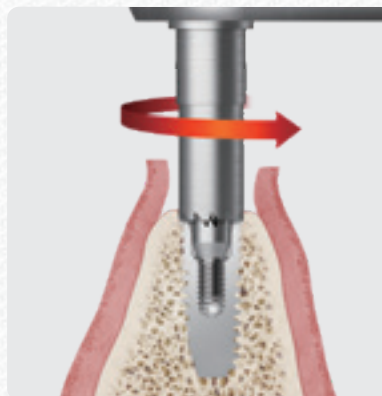
Connect the remover screw to the screw driver.



Connect the screw driver (with the remover screw attached) to the implant preliminarily by hand and rotate the driver clockwise.

Engage the torque wrench on the screw driver and tighten the screw driver clockwise. (mini 60Ncm, regular/wide 80Ncm)

Once the correct Ncm has been reached, remove the screw driver. The remover screw has been successfully installed.



Select the appropriate type of remover body for the implant diameter and preliminarily rotate the screw counterclockwise by hand.

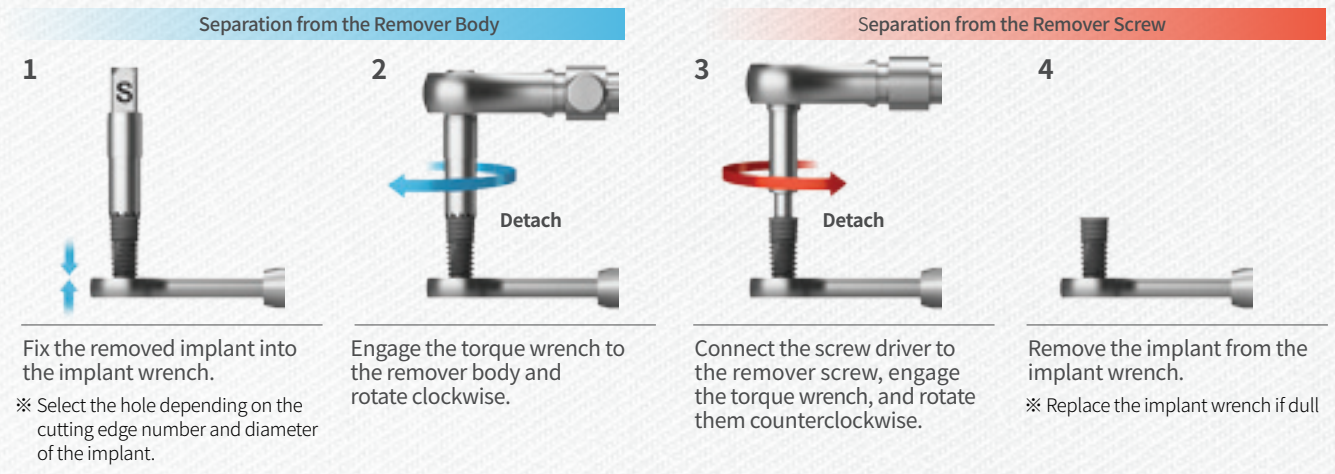
Mount the torque wrench on the remover body and rotate counterclockwise (Max. 400Ncm engagement possible).

Implant is removed with minimal bone loss via the locking mechanism between the implant and remover body.

※ To prevent overheating, irrigation to the remover body and implant is required.

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

Disassemble the removal tool from the implant

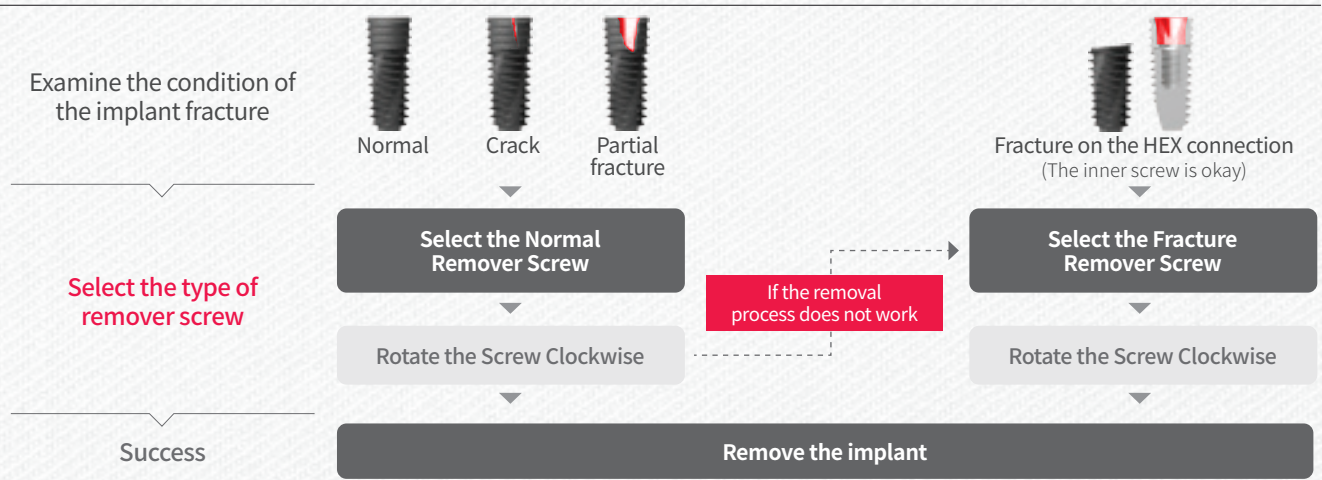


Guide to Remover Screw Selection

Select the type of Screw

Identify the Implant System	ET (TS)			SS		EK (KS)		
Identify the Implant Size	Ø3.5	Ø4.0~ Ø4.5	Ø5.0~ Ø7.0	P4.8	P6.0	Ø3.5	Ø4.0~ Ø4.5	Ø5.0~ Ø7.0
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	F4.0 / 4.5	F5.0
Color	Yellow	Green	Blue	Green	Blue	Yellow	Green	Blue

Select the Remover Screw



- ※ If the upper part of the implant is fractured, first select the Normal Remover Screw and rotate it with the Remover Body. If the implant is still not removed repeat the process with the Fracture Remover Screw.
- ※ If the internal screw is damaged and the implant cannot be removed with the ESR kit, it is recommended to use a Trephine drill.

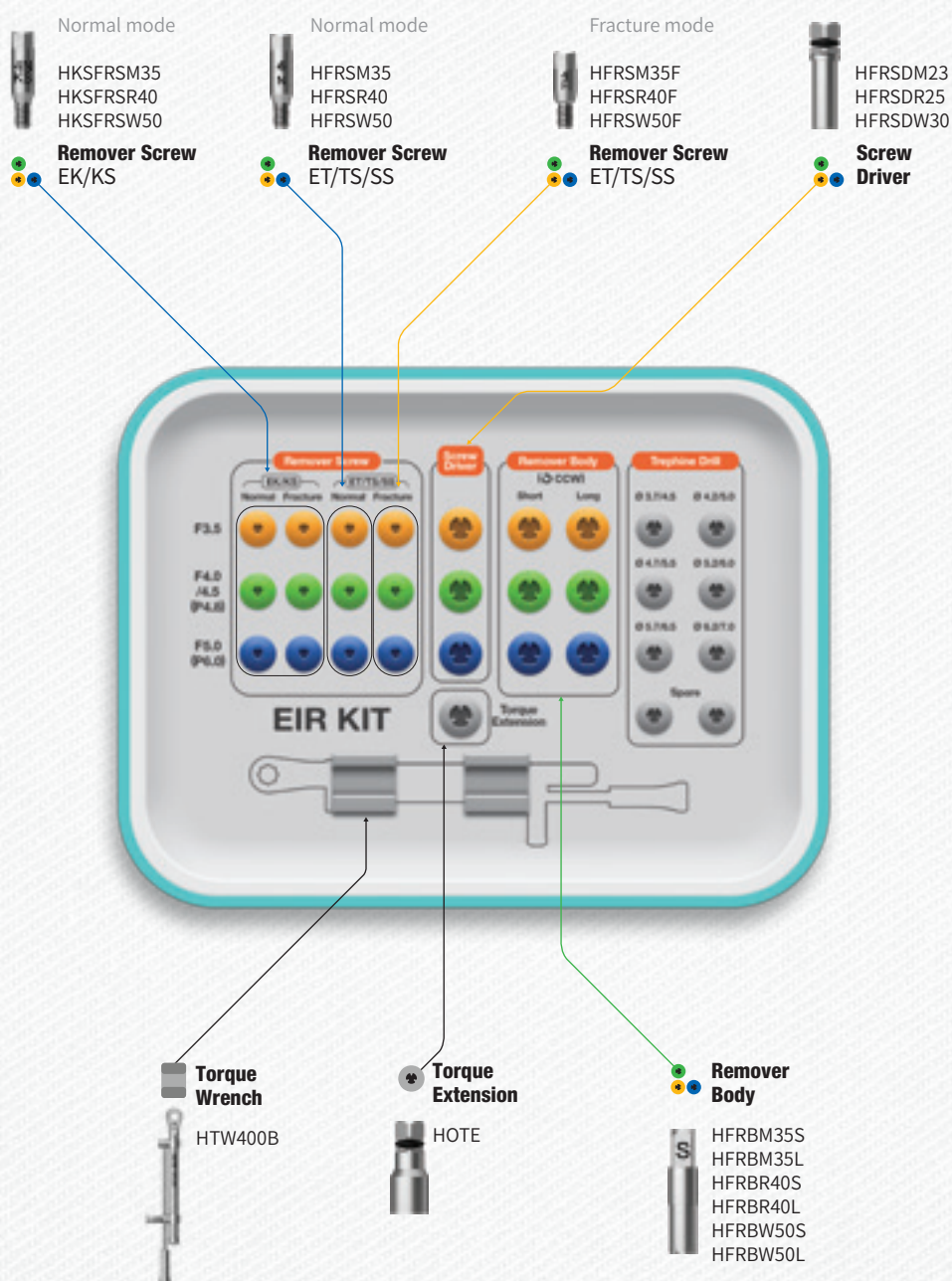
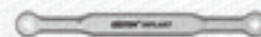
EIR KIT SURGICAL INSTRUMENTS

EIR SIMPLE KIT: HKSFRK

Compatible with **EK (KS) System** **ET (TS) System** **SS System**

Top panel components

Implant Wrench



EIR FULL KIT

SURGICAL INSTRUMENTS

EIR FULL KIT: HSFRFK_US

Compatible with

EK (KS) System

ET (TS) System

SS System

Nobel Biocare Active/Replace / **Straumann** Bone Level / **Astra** Osseo Speed TX

3i Full OSSEOTITE Tapered Certain / **Zimmer** Tapered / **BioHorizons®** Internal

Lower panel components

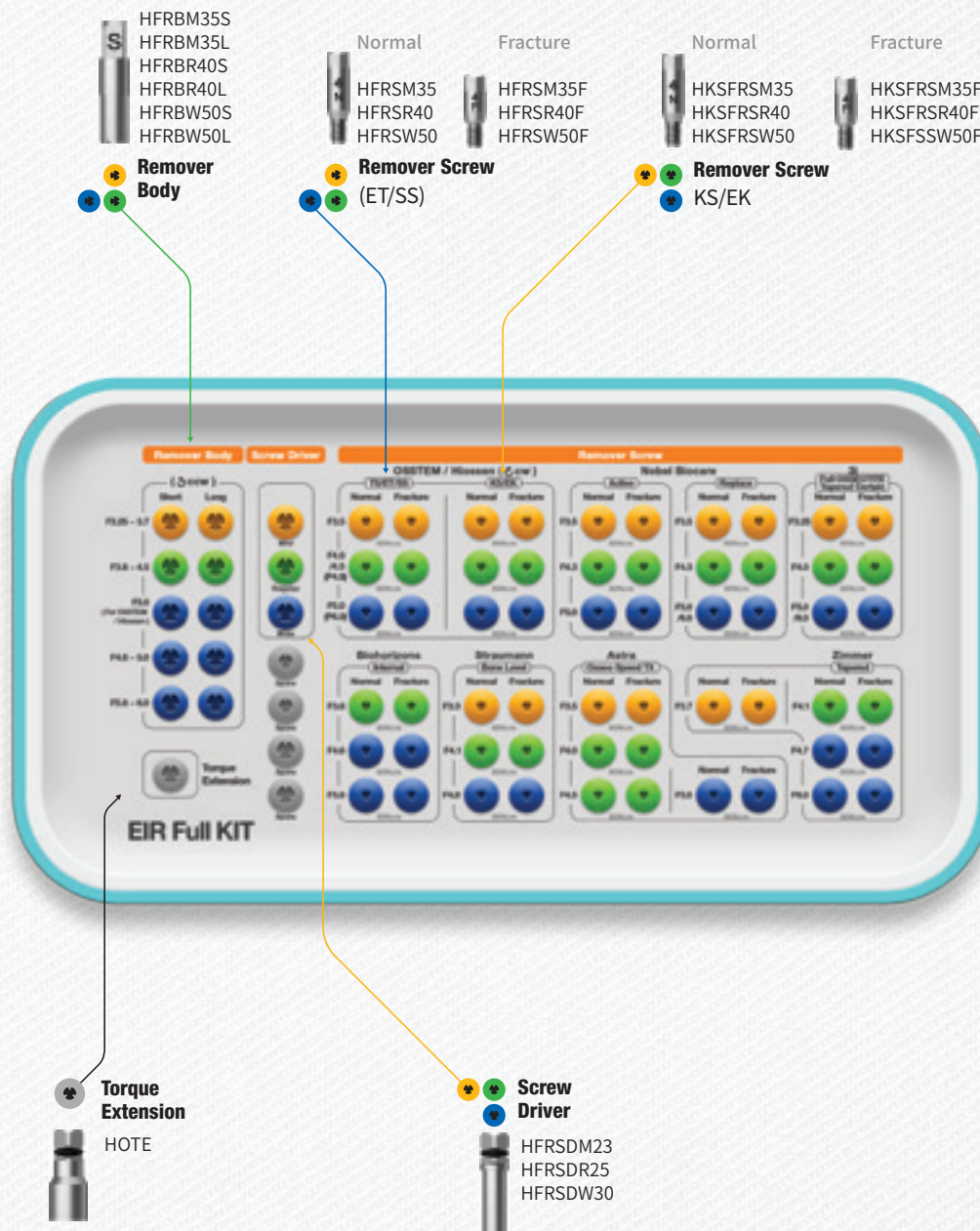
Implant Wrench

HFRDFE



Torque Wrench

HTW400B



Remover Screw

- Choose the right tool depending on the type and diameter of the failed implant
- Select Fracture Remover Screw to remove an implant with cracks
- Recommended torque : regular/wide 80Ncm, mini 60Ncm
- Single Use Only



Osstem				
Type	Mode	Mini Ø3.5	Regular Ø4.0~4.5/P4.8	Wide Ø5.0/P6.0
ET/SS	Normal Fracture	HFRSM35 HFRSM35F	HFRSR40 HFRSR40F	HFRSW50 HFRSW50F
EK	Normal Fracture	HKSFRSM35 HKSFRSM35F	HKSFRSR40 HKSFRSR40F	HKSFRSW50 HKSFRSW50F

Nobel Biocare				
Type	Mode	Mini Ø3.5	Regular Ø4.3	Wide Ø5.0/6.0
Active	Normal Fracture	HFRSMNA35 HFRSMNA35F	HFRSR40 HFRSR40F	HFRSW50 HFRSW50F
Replace	Normal Fracture	HFRSMNR35 HFRSMNR35F	HFRSR40 HFRSR40F	HFRSW50 HFRSW50F

Straumann				
Type	Mode	Mini Ø3.3	Regular Ø4.1	Wide Ø4.8
Bone Level	Normal Fracture	HFRSMS33 HFRSMS33F	HFRSRS41 HFRSRS41F	HFRSWS48 HFRSWS48F

3i				
Type	Mode	Mini Ø3.25	Regular Ø4.0	Wide Ø5.0/6.0
Full Osseotite Tapered Certain	Normal Fracture	HFRSMS33 HFRSMS33F	HFRSRI40 HFRSRI40F	HFRSWI50 HFRSWI50F

Biohorizons				
Type	Mode	Mini Ø3.8	Regular Ø4.6	Wide Ø5.8
Internal	Normal Fracture	HFRSRZ41 HFRSRZ41F	HFRSWZ47 HFRSWB46F	HFRSWZ60 HFRSWB46F

Astra					
Type	Mode	Mini Ø3.5	Regular Ø4.0	Regular Ø4.5	Wide Ø5.0
Osseo Speed TX	Normal Fracture	HFRSMNA35 HFRSMNA35F	HFRSRA40 HFRSRA40F	HFRSR40 HFRSR40F	HFRSW50 HFRSW50F

Zimmer					
Type	Mode	Mini Ø3.7	Regular Ø4.1	Wide Ø4.7	Ultra-Wide Ø6.0
Tapered	Normal Fracture	HFRSMZ37 HFRSMZ37F	HFRSRZ41 HFRSRZ41F	HFRSWZ47 HFRSWZ47F	HFRSWZ60 HFRSWZ47F

Screw Driver

- Connects and fastens the Remover Screw to the implant
- Recommended tightening torque : regular/wide 100Ncm, mini 80Ncm

F	Mini	Regular	Wide
	HFRSDM23	HFRSDR25	HRSDW30



Remover Body

- Connects to the Remover Screw to apply torque to remove the implant
- Select the correct type that matches the diameter of the implant to be removed

※ Single Use Only

F	Mini	Regular	Wide (for Hiossen)	Wide (for other brands)	Ultra-Wide
Short	HFRBM35S	HFRBR40S	HFRBW50S	HFRBW57S	HFRBUW60S
Long	HFRBM35L	HFRBR40L	HFRBW50L	HFRBW57L	HFRBUW60L



Torque Extension

- Extends the length of the screw driver and remover body (by 10mm)

HOTE



Torque Wrench

- Tightens Screw Driver and removes the implant using the Remover Body
- Applies up to 400Ncm of torque (markers at 80/100/200/300/400Ncm)
- Torque by pulling the bar back until it reaches the desired torque value marking
- Clean and sterilize for multiple usage

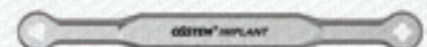
HTW400B



Implant Wrench

- Used to separate the implant from the Remover Body

HFRDFE



Kit & Tools Maintenance Tips



1. Saline/Distilled Water

Put the used tools in saline or distilled water after the surgery.



2. Alcohol washing

Immerse and wash all the used and unused tools in the kit with alcohol.

When tools mounted in rubber are kept as they are for an extended period, 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 3 months.

Precaution: Hydrogen peroxide should not be used. Laser marking(s) or discoloration of anodized material may occur in case of exposure to hydrogen peroxide.



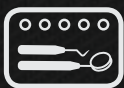
3. Run under water

Rinse thoroughly with distilled water or running water to get rid of blood stains or any remaining substances.



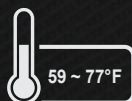
4. Drying

It is important to make sure that all the tools are absent of moisture to prevent future rusting. Use a dry cloth or a fan heater.



5. Mounting in the KIT

Mount the dried tools in the KIT cassette. (Refer to the color code for convenience)



6. Keeping Tools at Room Temperature

Autoclave the KIT with the tools mounted (at 270°F | 132°C for 15 minutes) and keep all the tools at room temperature.

NOTE All used tools after the surgery should be disassembled and washed before storage. Re-sterilize the KIT before the surgery to ensure safety. (270°F for 15 minutes). After the kit is opened, it is warranted for one year and the drills are warranted for up to 50 uses.



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