

# RESCUE KITS

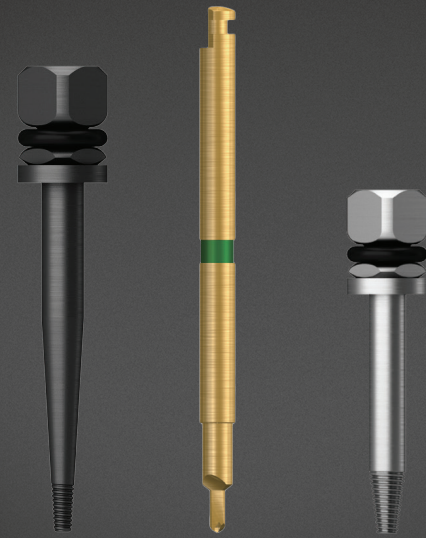
**ESR** - Broken Screw Removal Kit

**EIR** - Atraumatic Implant Removal Kit

**HIOSSSEN**  
IMPLANT

# ESR Kit

## Broken Screw Removal Kit



SR Tip

SR Drill

AR Tip

Achieve simple and efficient removal in just two easy steps

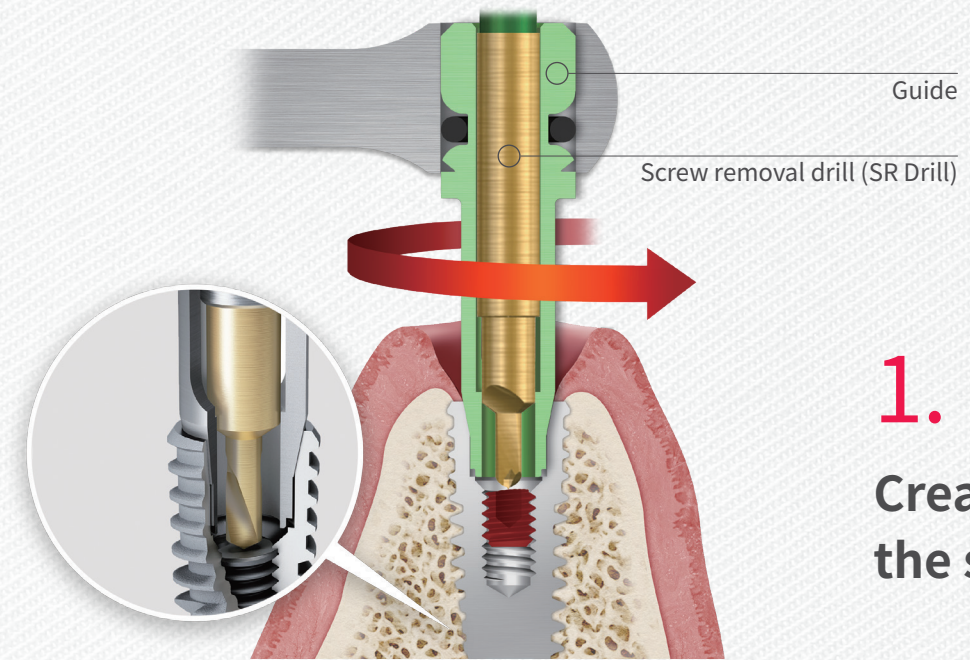
- Create a hole on the stripped screw and remove it

Excellent cutting performance of SR drill

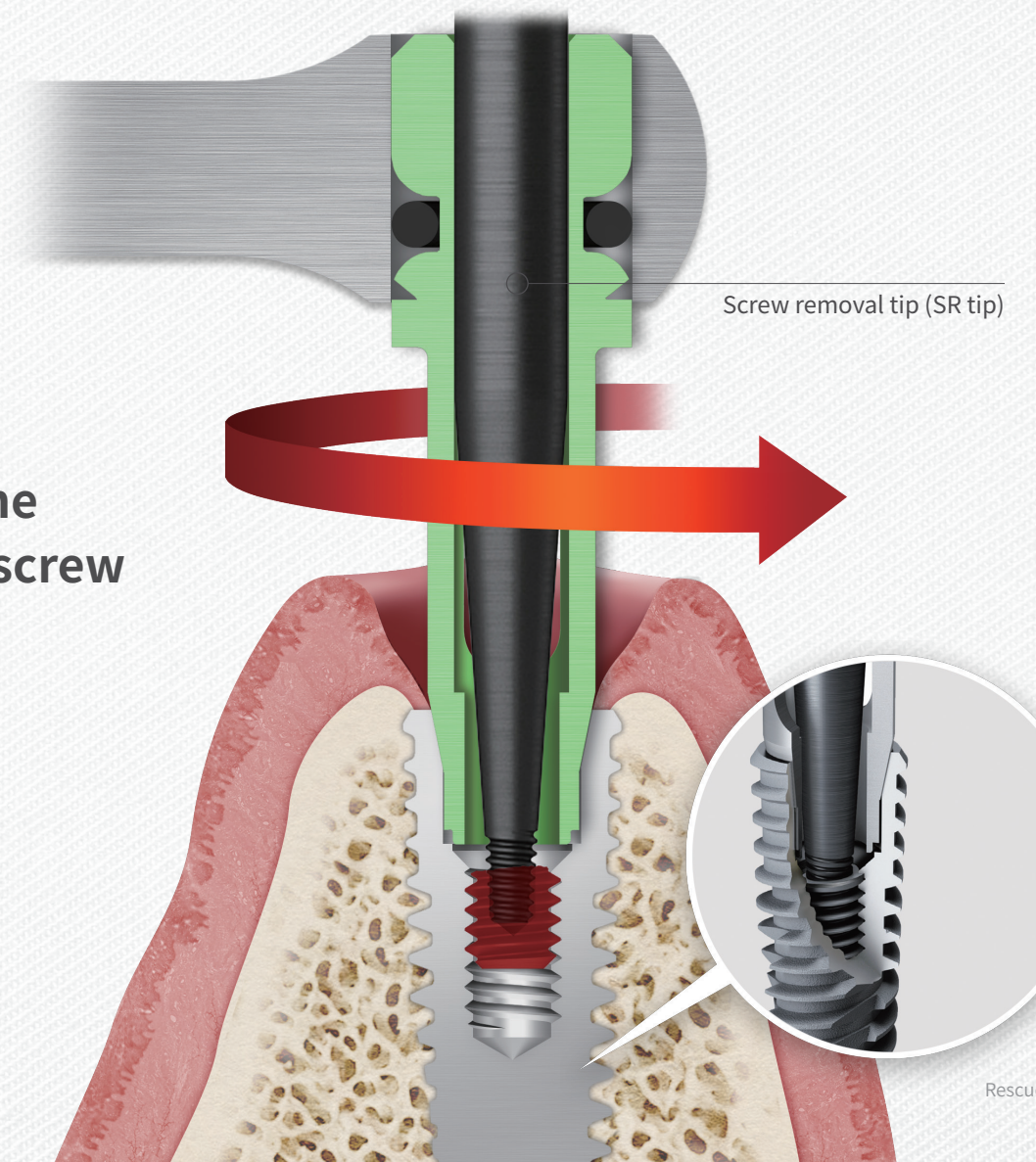
- Highly wear-resistant Tungsten Carbides SR drill

Various applications for prosthetic treatment failures

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



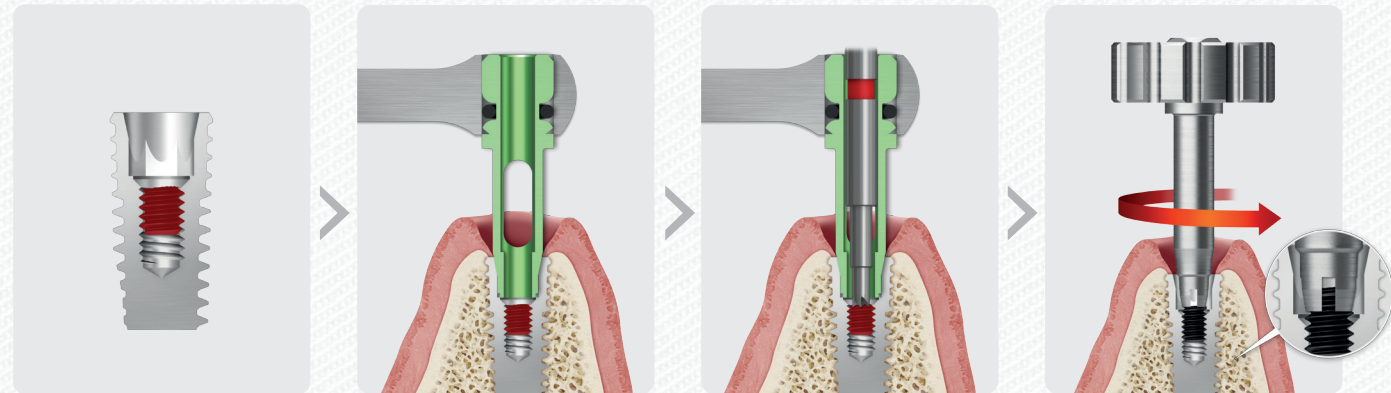
1.  
Create a hole on the stripped screw



2.  
Remove the fractured screw

# Removal process

## Removal of a Fractured Screw

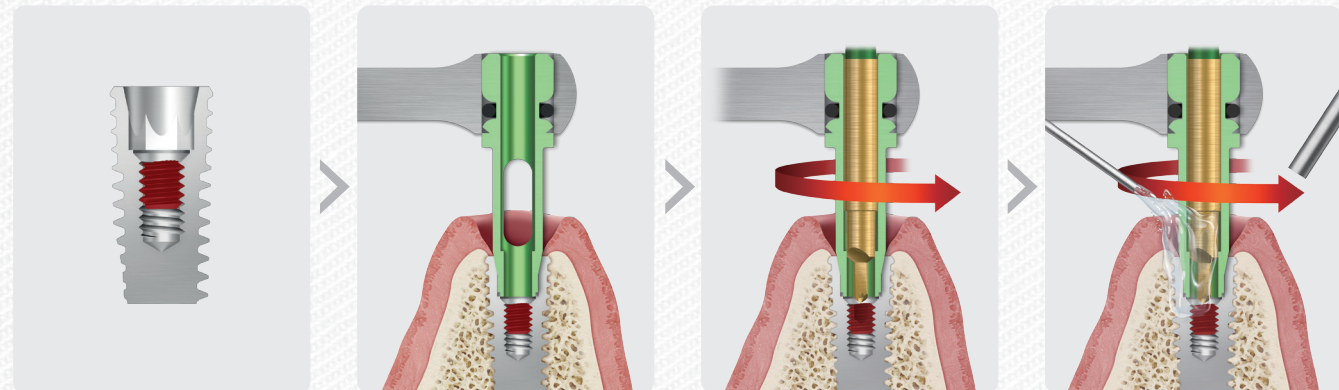


Ensure that the Guide is inserted into the implant, being careful to align the hex of the guide with the internal hex of the implant.

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.

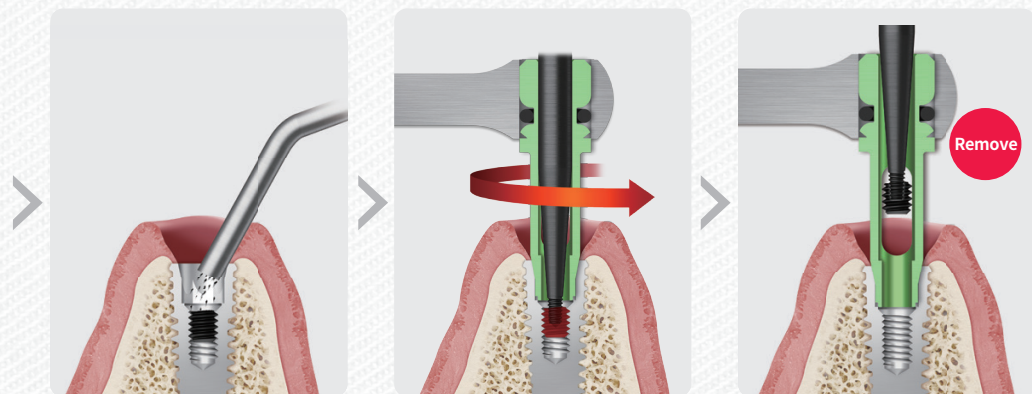
## If the fractured screw cannot be removed using a Reverse Drill...



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.

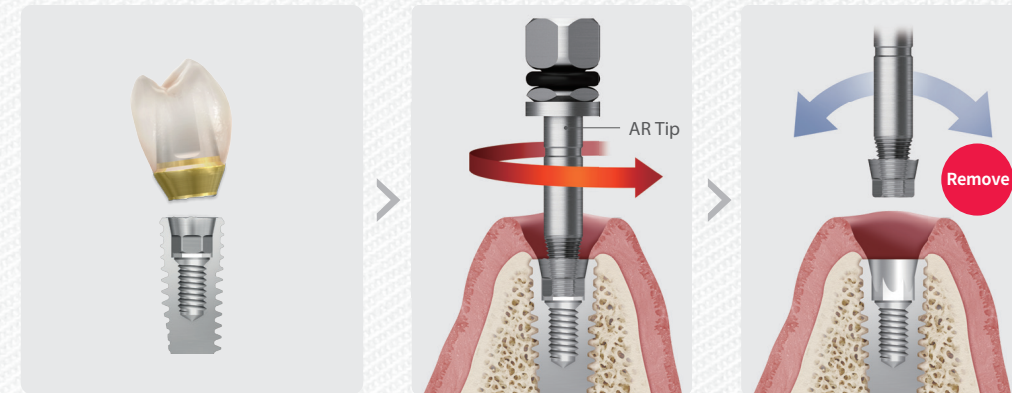


When complete, remove the guide and suction through any metal debris.

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

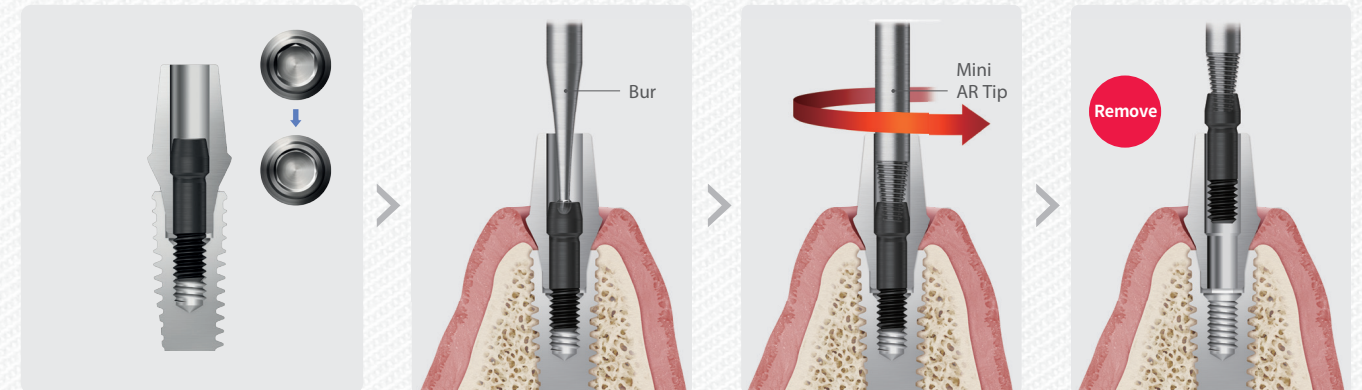
During the screw removal process, metal debris it is important to remove them properly. Use irrigation and an air blast to clean and remove the metal debris after the screw has been successfully removed.

## Removal of a Fractured Abutment



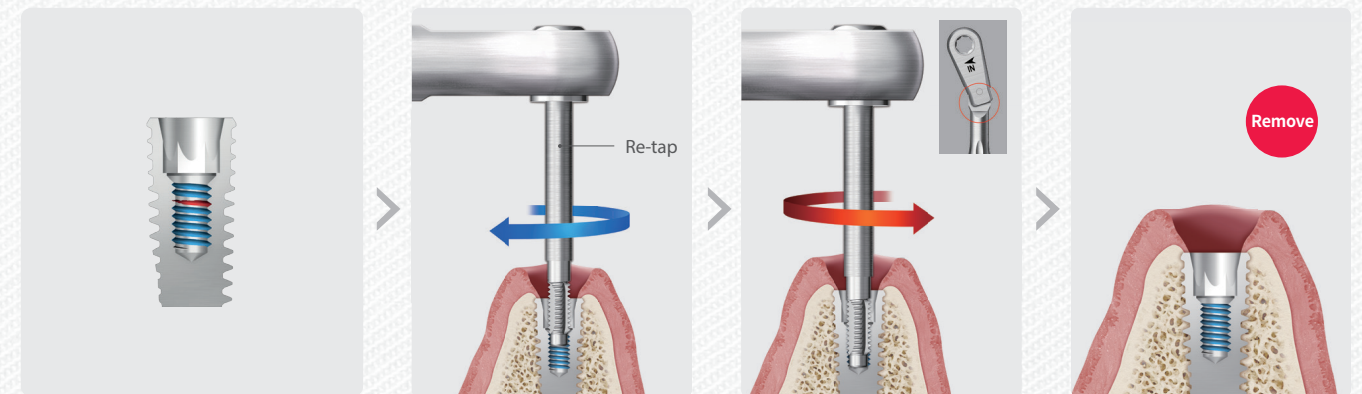
1. Insert the Abutment Removal (AR) tip into the abutment screw insert. Rotate the tip counterclockwise.
2. Grasp the AR tip with forceps, then gently pull and wiggle it left and right to remove the fractured abutment from the implant.

## 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



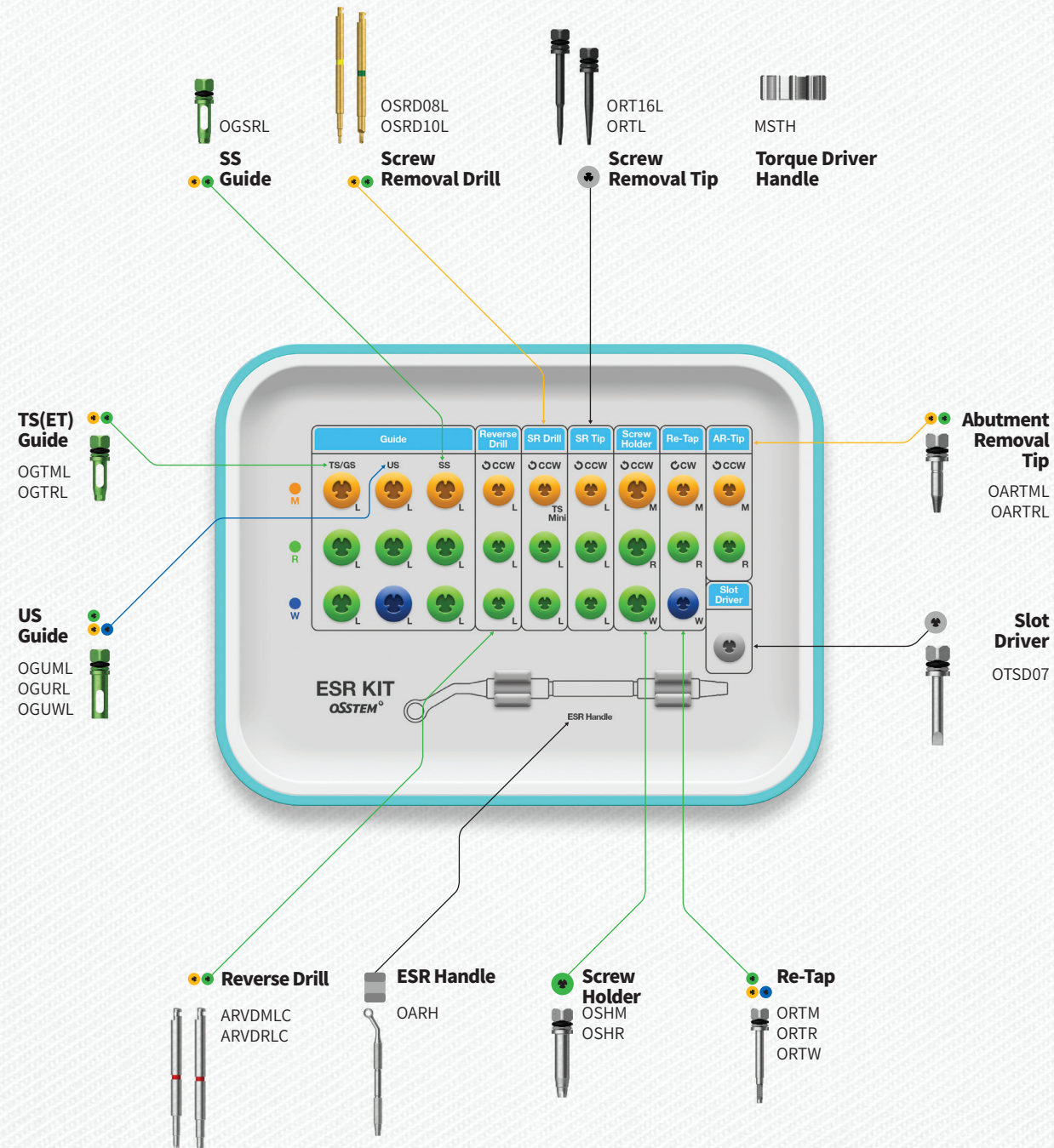
Verify the implant is completely clean and free of debris.

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 : HESEK

Compatible with **ET (TS) System** **SS System** **US System**

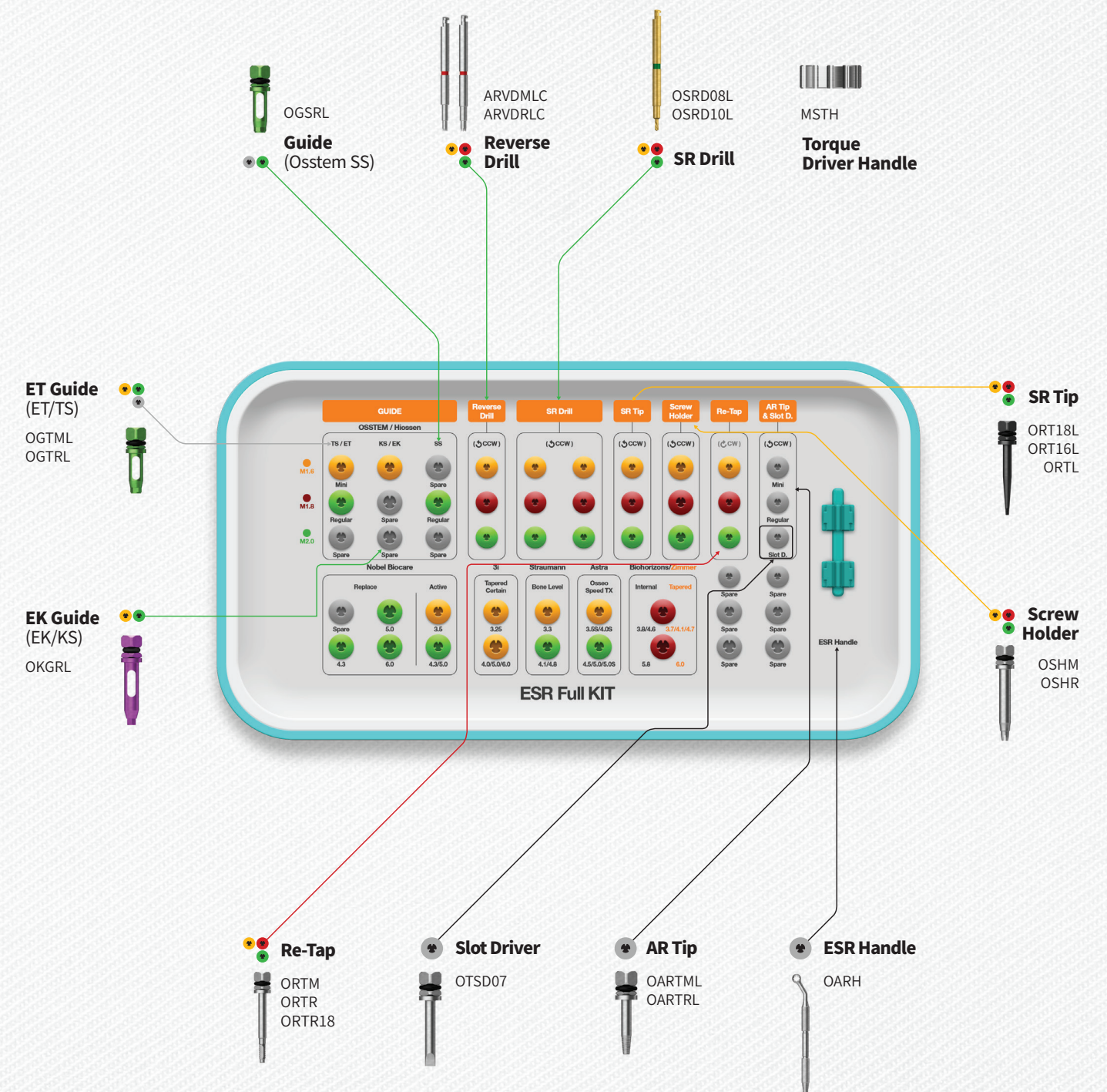


# ESR FULL KIT SURGICAL INSTRUMENTS

## ESR FULL KIT : HESRFK\_US



Compatible with **ET (TS) System** **SS System** **EK (KS) 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		OGTMS	OGTRS	-	
	Long		OGTML	OGTRL	-	
EK(KS)	Short		-	OKGRL	-	
	Long		-	-	-	
SS	Short		-	OGSRS	OGSRS	
	Long		-	OGSRL	OGSRL	



Nobel Biocare							
Type	Length	F	Ø3.5	Ø4.3	Ø5.0	Ø6.0	Image
Active	Short		OGNA01S	OGNA02S	OGNA02S	-	
	Long		OGNA01L	OGNA02L	OGNA02L	-	
Replace	Short		-	OGNR02S	OGNR03S	OGNR04S	
	Long		-	OGNR02L	OGNR03L	OGNR04L	
Type	Length	F	Ø3.3	Ø3.75	Ø4.0	Ø5.0	
MkIII	Short		OGUMS	OGURS	OGURS	OGUWS	
	Long		OGUML	OGURL	OGURL	OGUWL	

Straumann						
Type	Length	F	NC (3.3)	RC (4.1)	RC (4.8)	Image
Bone Level	Short		OGSB01S	OGSB02S	OGSB02S	
	Long		OGSB01L	OGSB02L	OGSB02L	
Type	Length	F	RN (3.3 / 4.1 / 4.8)		WN (4.8)	
Roxolid SLActive	Short		OGSTROS		OGSTROS	
	Long		OGSTROL		OGSTROL	

Astra					
Type	Length	F	Small (3.5S)	Large (4.5S / 5.0S / 5.0S)	Image
Osseo Speed TX	Short		OGA001S	OGA002S	
	Long		OGA001L	OGA002L	

3i					
Type	Length	F	3.25	4.0 / 5.0 / 6.0	Image
Full Osseotite Tapered Certain	Short		OGIF01S	OGIF02S	
	Long		OGIF01L	OGIF02L	
Full Osseotite Tapered	Short		-	OGURS	
	Long		-	OGURL	

Zimvie (Zimmer)					
Type	Length	F	Green (3.7 / 4.1 / 4.7)	Green (6.0)	Image
Tapered	Short		OGZB01S	OGZB02S	
	Long		OGZB01L	OGZB02L	

BioHorizons						
Type	Length	F	Yellow / Green	Blue	Image	
Internal (Tapered Bone Level)	Short		OGZB01S	OGZB02S		
	Long		OGZB01L	OGZB02L		
Type	Length	F	Ø3.5	Ø4.0	Ø5.0 / Ø6.0	
External	Short		OGUMS	OGURS	OGUBS	
	Long		OGUML	OGURL	OGUBL	

## 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	-	ARVDRSC	ARVDRSC
Long	ARVDMLC	ARVDRLC	ARVDRLC



M1.6 M1.8/2.0

## ESR Handle

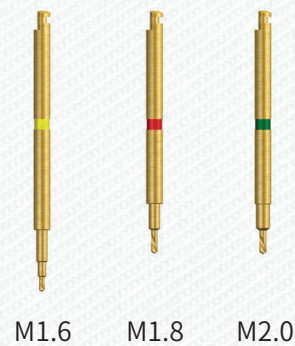
- Used to secure the guide to the implant

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



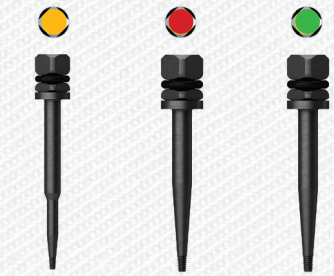
M1.6 M1.8 M2.0

L Type	M1.6	M1.8	M2.0
Short	OSRD08S	OSRD09S	OSRD10S
Long	OSRD08L	OSRD09L	OSRD10L

## 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		ORT16S	ORT18S	ORTS
Long		ORT16L	ORT18L	ORTL



## Torque Driver Handle

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

MSTH



## 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		OARTMS	OARTRS
Long		OARTML	OARTRL
Ex.Long		OARTMEL	OARTREL

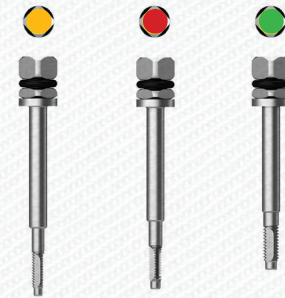


Mini Regular

## 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
	ORTM	ORTR18	ORTR



## 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

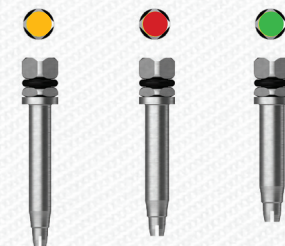
OTSD07



## Screw Holder

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

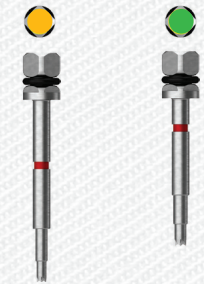
Type	M1.6	M1.8	M2.0
	OSHM	OSHR18	OSHR



## 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		-	ORVDRS
Long		ORVDML	ORVDRL

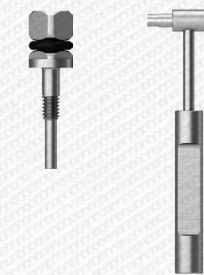


Mini Regular/Wide

## 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
	TASD	TASB	TAST



Driver Body

# EIR Kit

## Atraumatic Implant Removal Kit



- Remove failing or misplaced implants in only 3 steps
- Implant removal with minimal bone loss
- Up to 400Ncm removal torque can be applied

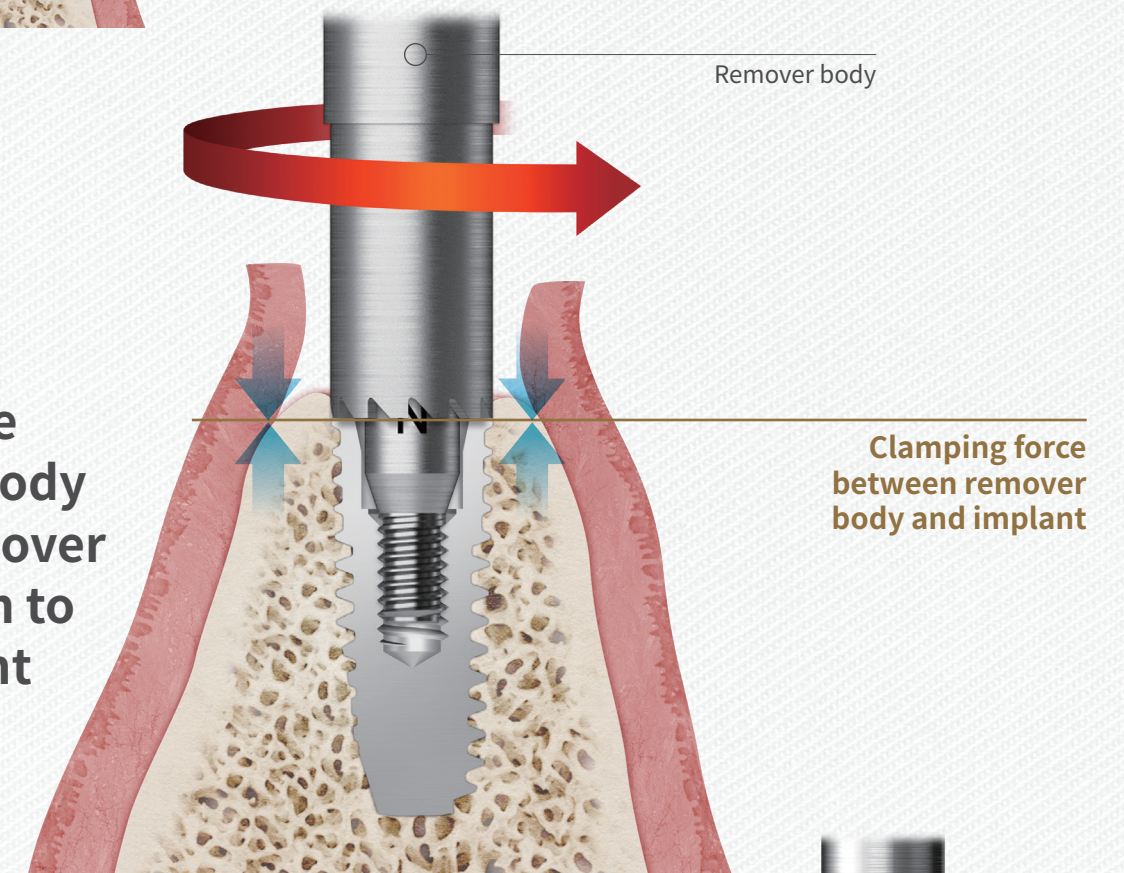


1.

Connect the remover screw on the implant

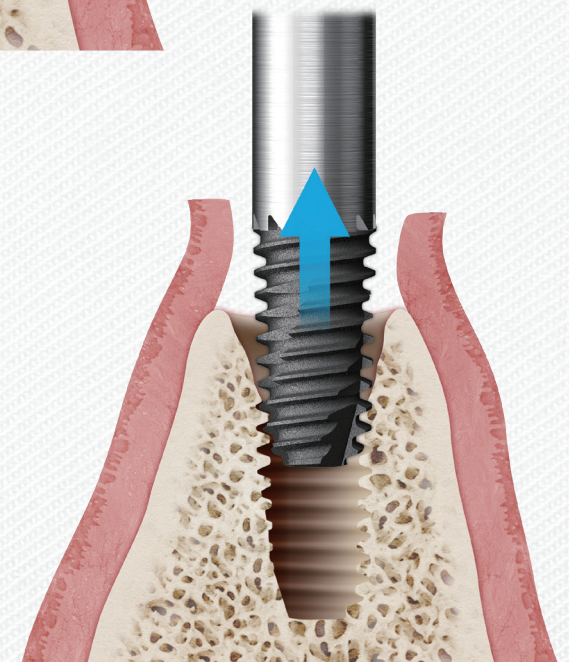
2.

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



3.

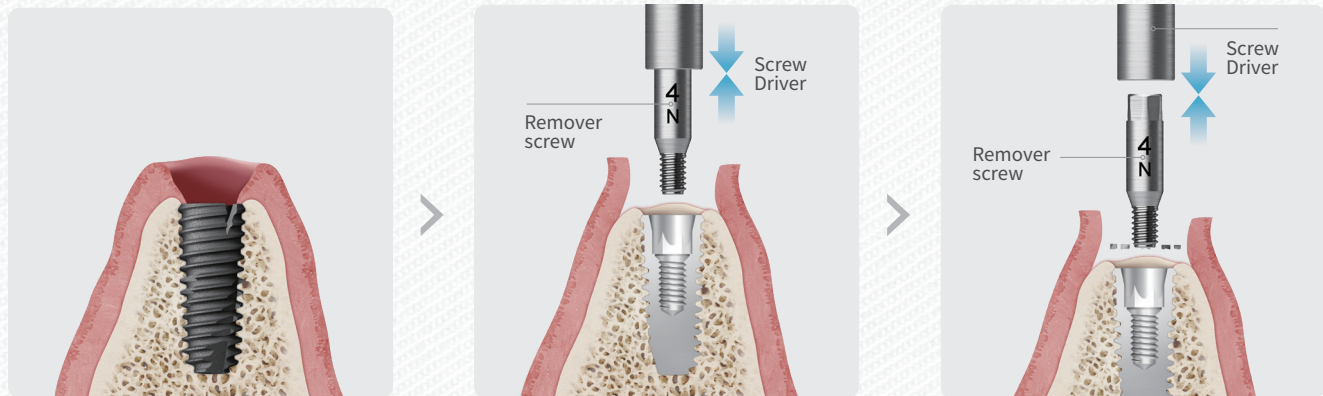
Remove the implant





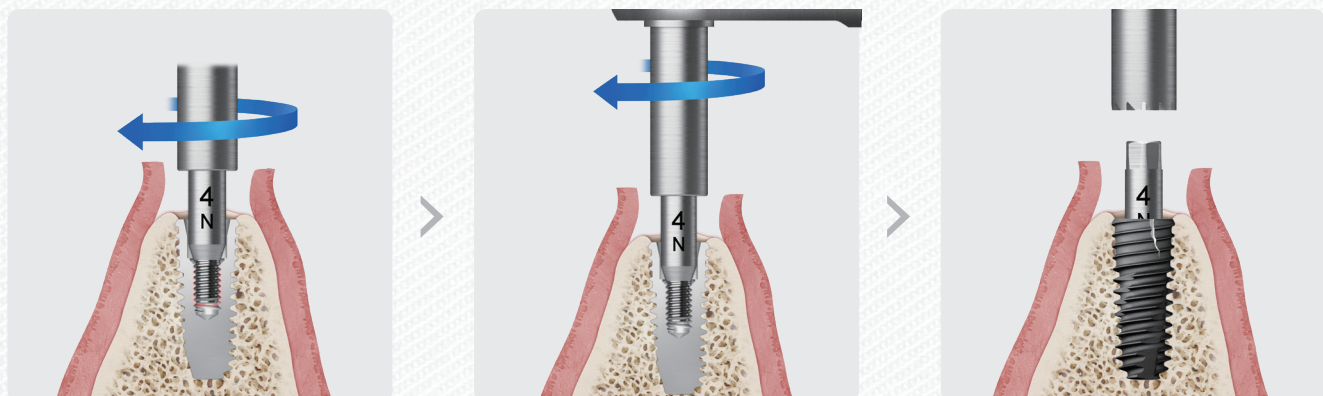
# Implant Removal Process

## 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).

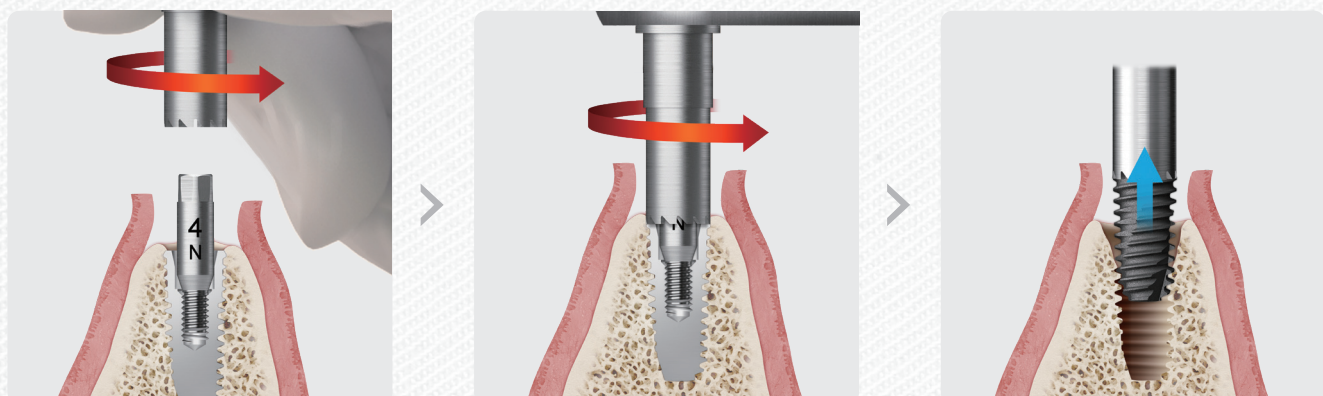
Connect the remover screw to the screw driver.



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.



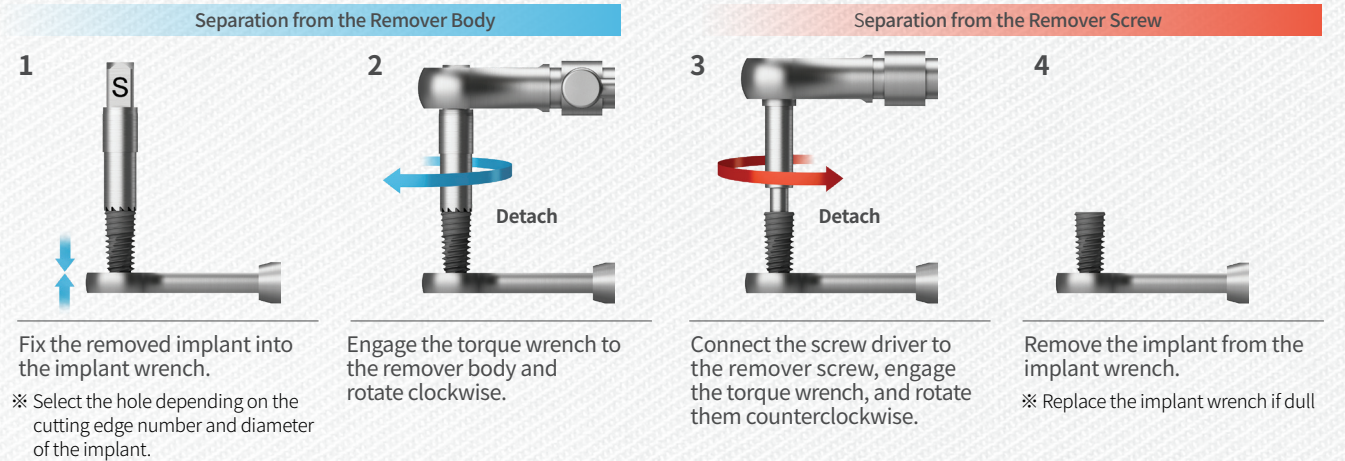
Select the appropriate type of remover body for the implant diameter and preliminarily rotate the screw counterclockwise by hand.

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.

**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

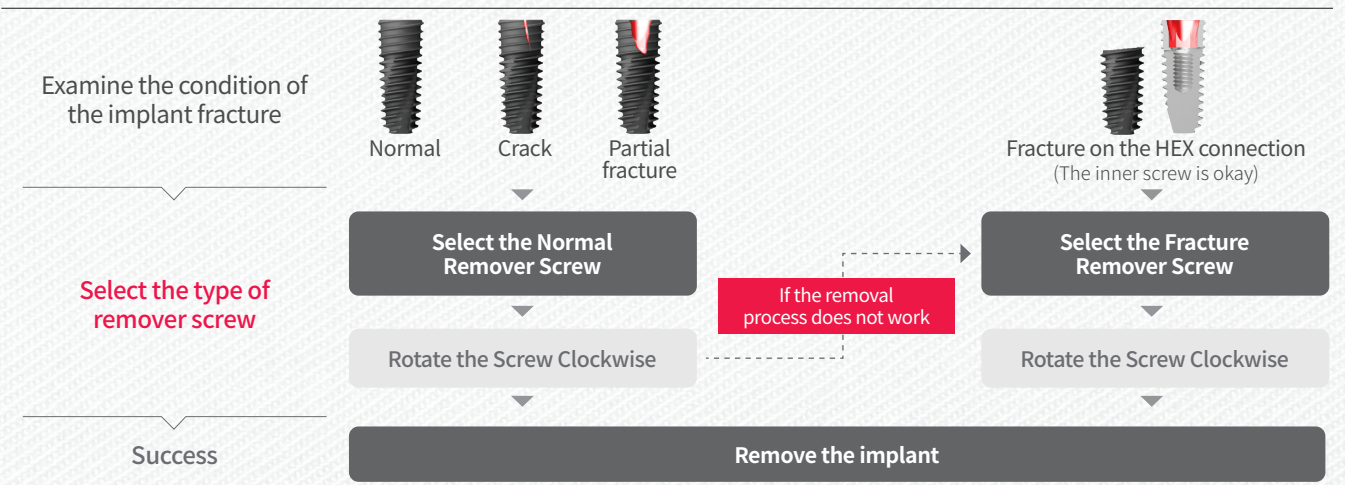


## Guide to Remover Screw Selection

### 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



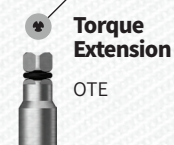
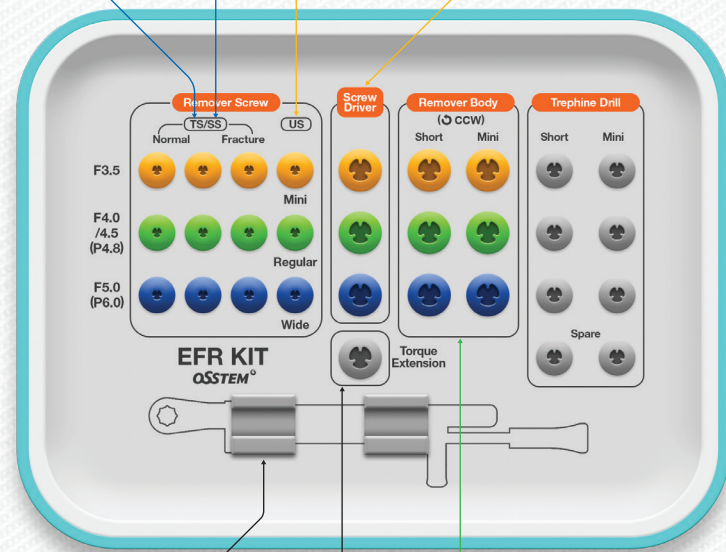
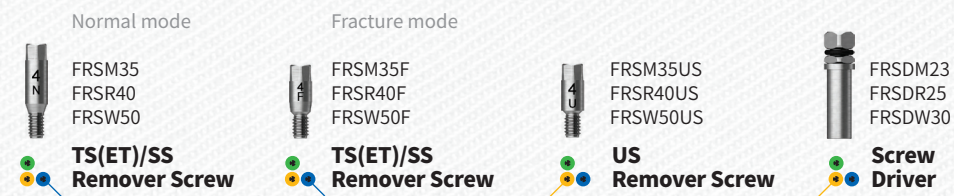
\* If the upper part of the implant is fractured, first select the Normal Remover Screw and rotate it with the Remover Body. If the implant is still not removed repeat the process with the Fracture Remover Screw.  
\* If the internal screw is damaged and the implant cannot be removed with the ESR kit,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

# EIR KIT SURGICAL INSTRUMENTS

## EIR SIMPLE KIT: H5FRK

Compatible with **ET (TS) System** **SS System** **US System**

Top panel components



# EIR FULL KIT SURGICAL INSTRUMENTS

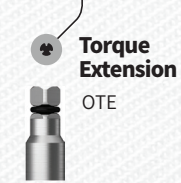
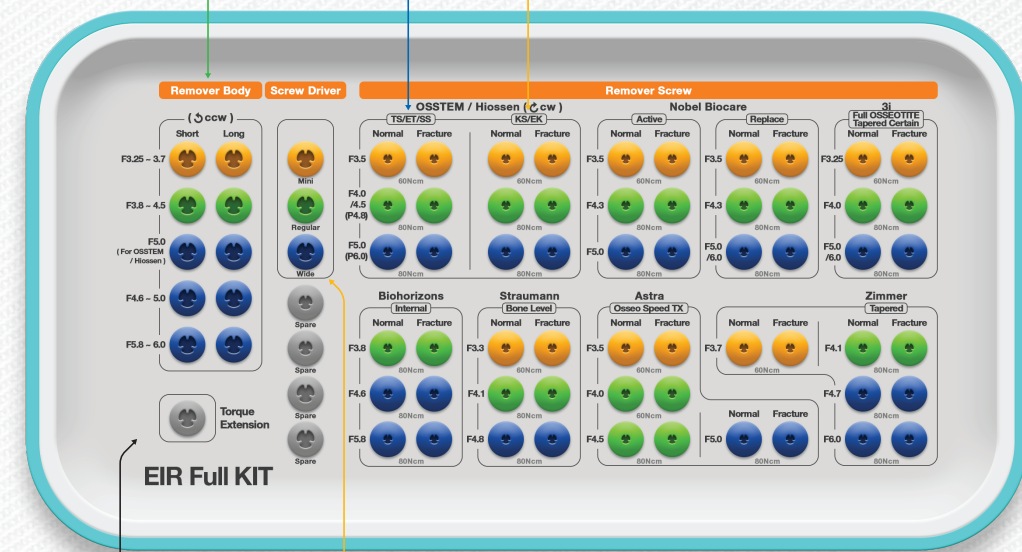
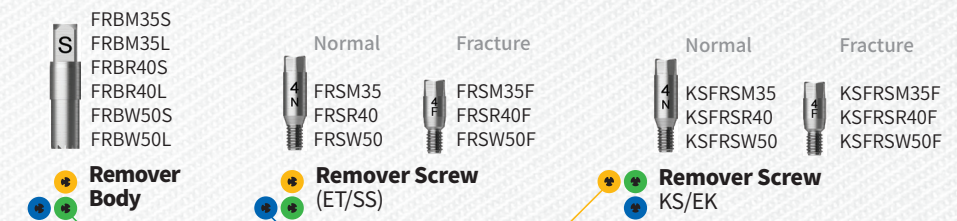
## EIR FULL KIT: H5FRFK\_US

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

Lower panel components

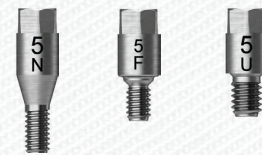


Nobel Biocare Active/Replace / Straumann Bone Level / Astra Osseo Speed TX  
3i Full OSSEOTITE Tapered Certain / Zimmer Tapered / BioHorizons® Internal



## 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	FRSM35	FRSR40	FRSW50
	Fracture	FRSM35F	FRSR40F	FRSW50F
EK	Normal	KSFRSM35	KSFRSR40	KSFRSW50
	Fracture	KSFRSM35F	KSFRSR40F	KSFRSW50F

Nobel Biocare				
Type	Mode	Mini Ø3.5	Regular Ø4.3	Wide Ø5.0/6.0
Active	Normal	FRSMNA35	FRSR40	FRSW50
	Fracture	FRSMNA35F	FRSR40F	FRSW50F
Replace	Normal	FRSMNR35	FRSR40	FRSW50
	Fracture	FRSMNR35F	FRSR40F	FRSW50F

Straumann				
Type	Mode	Mini Ø3.3	Regular Ø4.1	Wide Ø4.8
Bone Level	Normal	FRSMS33	FRSRS41	FRSWS48
	Fracture	FRSMS33F	FRSRS41F	FRSWS48F

3i				
Type	Mode	Mini Ø3.25	Regular Ø4.0	Wide Ø5.0/6.0
Full Osseotite Tapered Certain	Normal	FRSMS33	FRSRI40	FRSWI50
	Fracture	FRSMS33F	FRSRI40F	FRSWI50F

Biohorizons				
Type	Mode	Mini Ø3.8	Regular Ø4.6	Wide Ø5.8
Internal	Normal	FRSRZ41	FRSWZ47	FRSWZ60
	Fracture	FRSRZ41F	FRSWB46F	FRSWB46F

Astra					
Type	Mode	Mini Ø3.5	Regular Ø4.0	Regular Ø4.5	Wide Ø5.0
Osseo Speed TX	Normal	FRSMNA35	FRSRA40	FRSR40	FRSW50
	Fracture	FRSMNA35F	FRSRA40F	FRSR40F	FRSW50F

Zimmer					
Type	Mode	Mini Ø3.7	Regular Ø4.1	Wide Ø4.7	Ultra-Wide Ø6.0
Tapered	Normal	FRSMZ37	FRSRZ41	FRSWZ47	FRSWZ60
	Fracture	FRSMZ37F	FRSRZ41F	FRSWZ47F	FRSWZ47F

## Screw Driver

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

F	Mini	Regular	Wide
	FRSDM23	FRSDR25	FRSDW30



## 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	FRBM35S	FRBR40S	FRBW50S	FRBW57S	FRBUW60S
Long	FRBM35L	FRBR40L	FRBW50L	FRBW57L	FRBUW60L



## Torque Extension

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

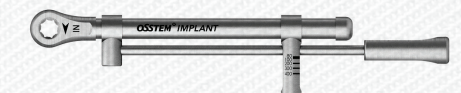
OTE



## 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.



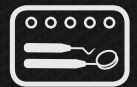
## 3. Run under water

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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All Hiossen Implants are processed and  
Manufactured in the USA

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