

# SERVICE SET MANUAL

*GRAND MORSE® IMPLANTS*



**straumann**group



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## 1 | INTRODUCTION

This manual was made to help the clinician with the rescue of Neodent® Grand Morse® implants in the situations below:

- Fractured one-piece abutment (Figure 1);
- Fractured two-piece abutment (Figure 2);
- Abutment with fractured threads (Figure 3).

The objective of this manual is to guide the clinician to the best solution for each implant and abutment rescue. In addition, this manual seeks to provide a step-by-step description of the given situation.

At the end of each situation, in the “summarizing” section, the clinician will find a one-page overview of the presented situation.

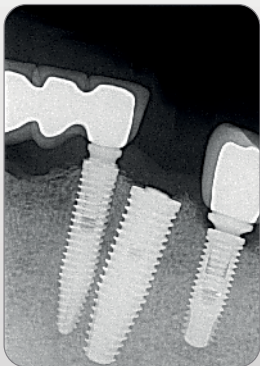


Figure 1.

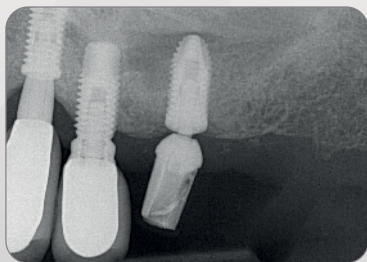


Figure 2.

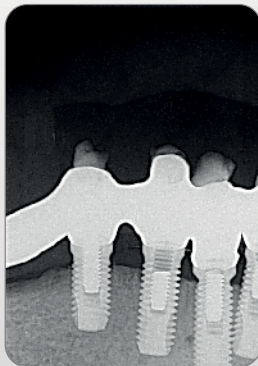


Figure 3.

Illustrative images gently provided by Dr. Geninho Thomé, ILAPEO (Curitiba, PR, BRA).

## 2 | TOPICS OF ATTENTION

There are some conditions/features that are important to be noticed before moving on with the step-by-step;

(i) The service set is only an instrumental to aid the clinician on the eventual rescue of a Neodent® Grand Morse® Implant.

(ii) The service set does not imply the success of the procedure, as it will depend on the clinician's ability to use such devices.

(iii) By being in compliance with this step-by-step manual, the chances of success with the use of the service set are considerable, but yet not guaranteed.

(iv) The procedure success may depend, including but not limited to, on the clinician's technique and ability, on patient's conditions on the previous and post procedure.

(v) This guide does not substitute the IFU (Instructions for Use) of the instrumentals of the service set, available at [ifu.neodent.com.br](http://ifu.neodent.com.br).

Regarding the implants/features, it is important to notice:

- Implant Connection – Grand Morse®;

- Implant Diameter – 3.5mm, 3.75mm, 4.0mm, 4.3mm or 5.0mm;

ⓘ Attention: before using this service set, please be aware of the conditions and risks implied, by reading this manual and the products IFU's. In case of questions, please contact Neodent® Customer Service. Find the closest to you at [www.neodent.com](http://www.neodent.com).

Neodent® does not guarantee the success of the procedure. It is the clinician's exclusive responsibility to evaluate the patient's health conditions and viability of the procedure.

The incorrect use of this service set may result in more abrupt procedures to patient.

If the proposed method is not sufficient to remove the failed component, the removal of the implant will be necessary. In that case, use a trephine bur, the one closest to the implant diameter, to remove it.

❗ For the following procedures, the use of a surgical motor is necessary.

The following table illustrates the drill protocol for each situation. It is really important to verify of the Drill number, rotation and direction.

Procedure	Step	Drill	Rotation	Direction	Article Number
Fractured one-piece abutment	Step 1	Bone Removal	100 rpm	Clockwise	*
	Step 3	Ø 1.10 Ø 1.30 Ø 1.50	800 rpm	Clockwise	130.108
Fractured two-piece abutment	Step 1	Ø 1.50	800 rpm	Clockwise	130.107
	Step 2	Bone Removal	100 rpm	Clockwise	*
	Step 5	Ø 1.10 Ø 1.30 Ø 1.50	800 rpm	Clockwise	130.108
Abutments with fractured threads	Step 1	Ø 1.0	800 rpm	Counterclockwise	103.106

Table 1. \* Bone Removal Drill Article Number changes according to each implant diameter.

### 3 | FRACTURED ONE-PIECE ABUTMENT

This technique is used when a one-piece abutment fractures inside a Neodent® Grand Morse® Implant. Table 2 illustrates all the implant types and diameters in which this situation could occur. And also, the abutments that could fracture and may be removed using this technique.

#### 3.1 | Implants and abutments available for this situation

Implant Connection	Implant Diameter	Implant Type	Abutments
Grand Morse®	3.5 mm	Helix GM® Drive GM® Titamax GM®	- Straight GM Mini Conical Abutment  - GM Micro Abutment  - GM Equator Attachment  - Straight GM Novaloc
	3.75 mm	Helix GM® Titamax GM®	
	4.0 mm		
	4.3 mm	Helix GM® Drive GM®	
	5.0 mm	Helix GM® Drive GM® Titamax GM®	

Table 2.

## 3.2 | Necessary products for this situation

### Step 1 and 2



Bone Removal and Drill Guide Sets

Diameter	3.5 mm			3.75 mm		4.0 mm		4.3 mm		5.0 mm		
Implant type	Helix GM®	Drive GM®	Titamax GM®	Helix GM®	Titamax GM®	Helix GM®	Titamax GM®	Helix GM®	Drive GM®	Helix GM®	Drive GM®	Titamax GM®
Article Number	130.084			130.086		130.088		130.090		130.093		

### Step 3



130.108
Fractured Abutment Removal Drill Set

### Step 4



105.017	130.079
Manual Screwdriver for Rectifier	Rectifier Set 1.8

### Step 5



130.098	104.012
Fractured Abutment Removal Screw	Manual Screwdriver 1.2

### Step 7



130.098	130.099
Fractured Abutment Removal Screw	Abutment Removal Handle

### Step 9



130.102
Remover 1.4

### Step 10\*



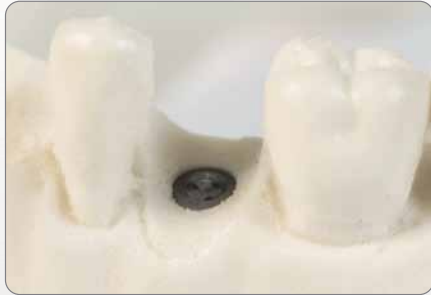
105.017	130.078
Manual Screwdriver for Rectifier	Rectifier Set 1.6

Table 3. Products used as auxiliary to remove fractured one-piece abutments in Grand Morse® implants.

\*Optional.

### 3.3 | Step-by-step for removing fractured one-piece abutment

Start by performing the anesthesia in the patient and a create flap, for optimal implant and abutment visualization.



**Step 1:** If necessary, use the Bone Removal Drill to remove the bone from the implant coronal region with the surgical contra-angle motor in 100 rpm. Ensure your implant type, diameter and connection to place the correct Bone Removal Drill and Drill Guide pack (please refer to Table 3).



**Step 2:** Place the Drill Guide on the implant platform and attach it to the closest support (tooth, abutment or prosthesis) with acrylic resin to maintain its position. The indicated acrylic resin to do this procedure is the Patter Resin LS. Make sure that the Guide is stable and aligned with the long axis of the implant with the aid of a periapical x-ray.

It is really important that the Drill Guide be as parallel as possible to the implant;

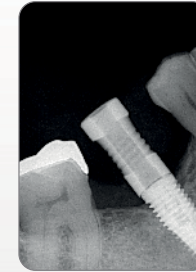
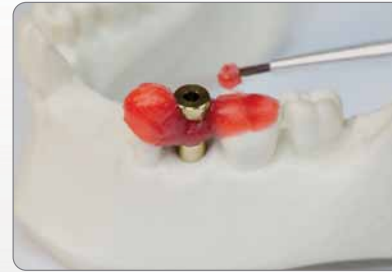
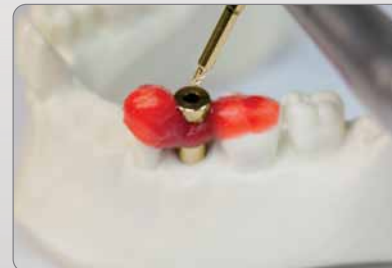
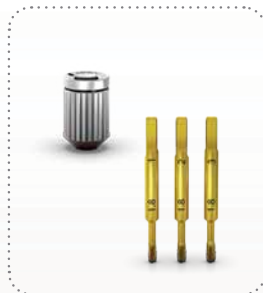


Image gently provided by Dr. Geninho Thomé, ILAPEO (Curitiba, PR, BRA).

**Step 3:** Start drilling the fractured abutment with the Ø1.10 mm Drill of the Fractured Abutment Removal Drill Set (130.108) in the surgical contra-angle with 800 rpm, clockwise, under constant irrigation and continue with the drilling protocol, using drills Ø1.30 and Ø1.50 mm. Stop the procedure when the drill stop touches the Guide platform;



**Step 4:** Manually tap the hole created in Step 3 using the Rectifier Set 1.8 (130.079) one by one, with the Manual Screwdriver to Rectifier (105.017);



**Step 5:** Screw the Removal Screw (130.098) into the fractured abutment with the 1.2 mm Hexagonal Screwdriver (104.012). The stop reference of the Removal Screw must be inside the implant until it touches its platform;



**Step 6:** Remove the acrylic resin between the closest support and the Drill Guide;

**Step 7:** Place the Abutment Removal Handle (130.099) between the Drill Guide and the Removal Screw and force the cable towards the apical portion to promote the unlocking of the fractured abutment;



**Step 8:** Remove the Drill Guide, the Abutment Removal Handle and the Removal Screw;

**Step 9:** Manually remove the fractured abutment with the Remover 1.4 (130.102) attached to the Torque Wrench (104.050), counterclockwise. Do not exceed a torque of 60 N.cm.

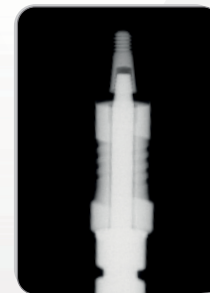


Image gently provided by Dr. Geninho Thomé, ILAPEO (Curitiba, PR, BRA).

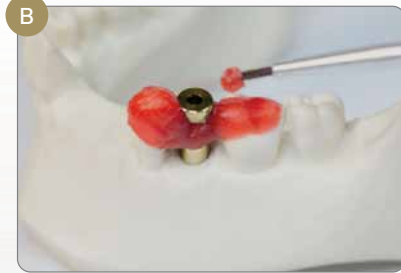
**Step 10:** Check the need for rectifying the internal threads of the implants before inserting the new abutment. If necessary, use the Rectifier Set 1.6 (130.078), one by one, with the Manual Screwdriver to Rectifier (105.017).

**Step 11:** Proceed with placing a new abutment and the prosthetic workflow.

### 3.4 | Summarizing - Neodent® technique: fractured one-piece abutment



Use of Bone Removal Drill to remove bone from the implant coronal region;



Attach Drill Guide to support. Make sure to take an x-ray to confirm its position;



Drill Set inside the Drill Guide. Follow the protocol and stop the procedure when the drill stop touches de Drill Guide, under constant irrigation;



Produce new threads inside the fractured abutment with the Set of Rectifiers and the Manual Screwdriver;



Attach the Removal Screw on the fractured abutment with the 1.2 mm Hexagonal Screwdriver. Remove the attachment in acrylic resin between the closest support and the Drill Guide;



Place the Abutment Removal Handle between the Guide and the Removal Screw and force the cable towards the apical portion to promote the unlocking of the fractured abutment. Remove the Drill Guide, the Abutment Removal Handle and the Removal Screw;



Manually remove the fractured abutment with the Remover 1.4 attached to the Torque Wrench, counterclockwise. Check the need to rectify the implant internal threads. Proceed with placing a new abutment and the prosthetic workflow.

## 4 | FRACTURED TWO-PIECE ABUTMENTS

This technique is used when a two-piece abutment with a floating or removable screw fractures inside a Neodent® Grand Morse® Implant. Table 4 illustrates all the implant types and diameters in which this situation could occur. And also, the abutments that could fracture and may be removed after this technique.

### 4.1 | Implants and abutments available for this situation

Implant Connection	Implant Diameter	Implant Type	Abutments
Grand Morse®	3.5 mm	Helix GM® Drive GM® Titamax GM®	- GM Exact Abutment  - Angled GM Mini Conical Abutment
	3.75 mm	Helix GM® Titamax GM®	- GM Universal Abutment  - GM Anatomic Abutment
	4.0 mm		- GM Titanium Bases  - GM Pro Peek Abutment
	4.3 mm	Helix GM® Drive GM®	- GM Temporary Abutment  - Angled GM Novaloc
	5.0 mm	Helix GM® Drive GM® Titamax GM®	- GM Titanium Block  - GM Customizable Healing Abutment in PEEK

Table 4.

## 4.2 | Necessary products for this situation

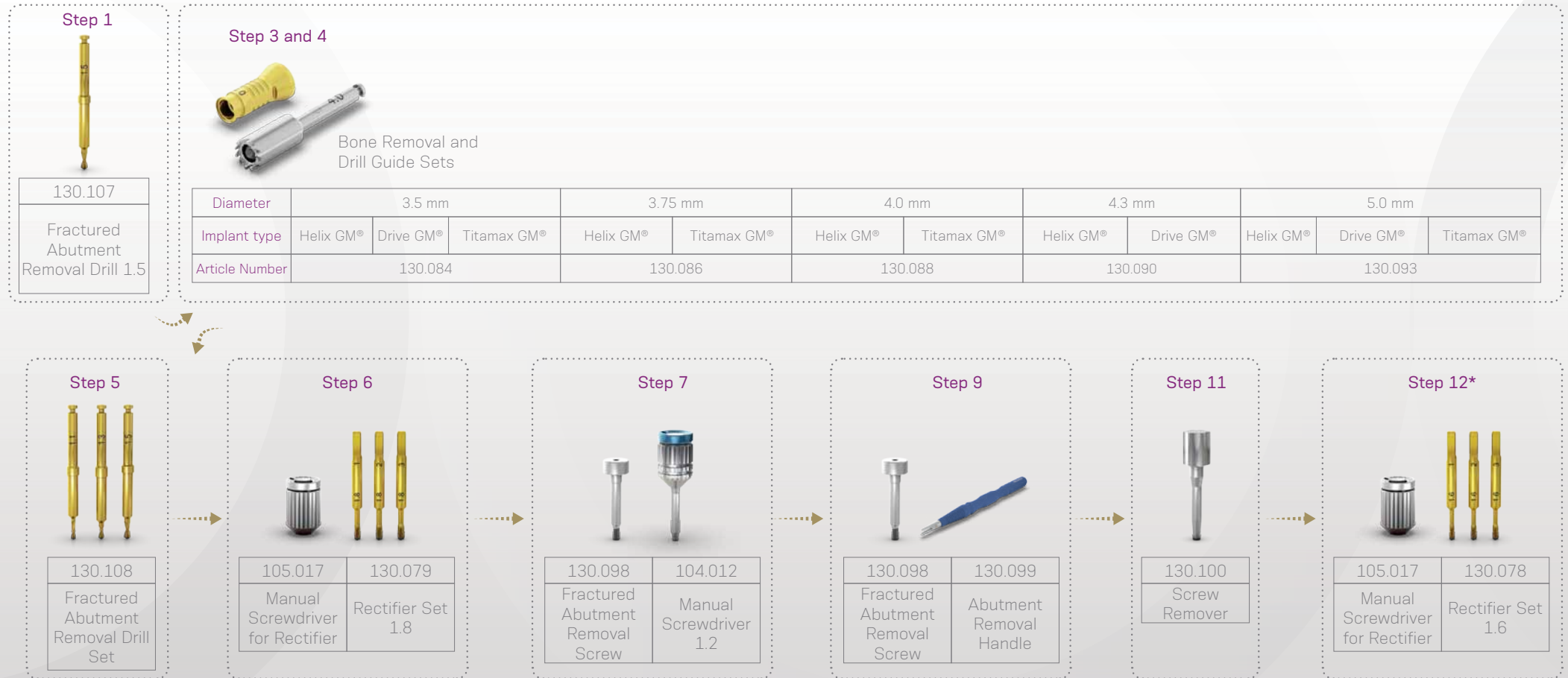


Table 5. Products used as auxiliary to remove fractured 2-piece abutments with floating screw in Grand Morse® implants.

\*Optional.

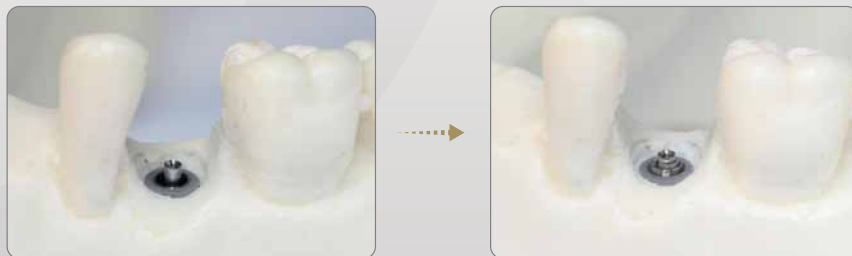
## 4.3 | Step-by-step for removing fractured two-piece abutment

Start by performing the anesthesia in the patient and create a flap for optimal implant and abutment visualization;

**Step 1:** Start by using the Fractured Abutment Removal Drill 1.5 (130.107) with the surgical contra-angle motor in 800 rpm, clockwise, under constant irrigation. Make sure that the head of the screw is totally removed;



**Step 2:** Remove the restoration and abutment from the remaining screw. If you are now able to remove the portion of the abutment from within the implant and the screw fragment the process is complete. If not, turn the screw fragment counterclockwise until maximum level with the Screw Remover (130.100) to stabilize it. Cut the fragment with high-rotation drill. After cutting it, turn the fragment counterclockwise towards the implant so that the portion of the cone inside the implant is free. The fragment can be turned clockwise with the aid of an exploratory instrument or with the tip of the drill;



**Step 3:** If necessary, use the Bone Removal Drill to remove the bone from the implant coronal region with the surgical contra-angle motor in 100 rpm, clockwise. Ensure your implant type, diameter to place the right Bone Removal Drill and Drill Guide pack (please refer to table 5).



**Step 4:** Place the Drill Guide on the implant platform and attach to the closest support (tooth, abutment or prosthesis) with acrylic resin to maintain its position. The indicated acrylic resin to do this procedure is the Pattern LS - JC. Ensure that the Guide is stable and aligned with the parallel long axis of the implant, with the help of a periapical x-ray.

It is really important that the Drill Guide be as parallel as possible to the implant;

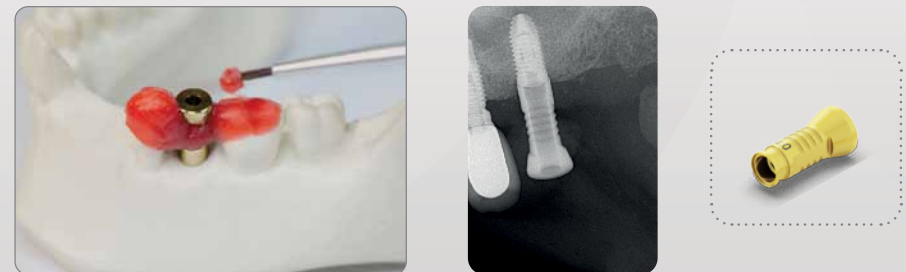
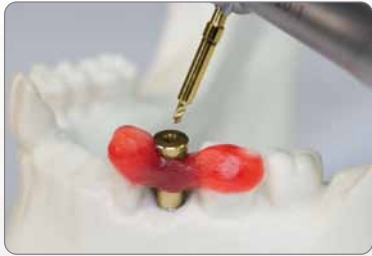


Image gently provided by Dr. Geninho Thomé, ILAPEO (Curitiba, PR, BRA).

**Step 5:** Start drilling the fractured abutment with the Ø1.10 mm Drill of the Fractured Abutment Removal Drills Set (130.108) inside the surgical contra-angle with 800 rpm, clockwise, under constant irrigation and continue with the drilling protocol, using drills Ø1.30 and Ø1.50 mm. Stop this procedure until the drill stop touches the drilling Guide platform;



**Step 7:** Screw the Removal Screw (130.098) on the fractured abutment with the 1.2 mm Hexagonal Screwdriver (104.012). The stop reference of the Removal Screw must be inside the implant until it touches its platform;



**Step 6:** Produce new threads inside the fractured abutment by using manually the Rectifier Set (130.079) one by one with the Manual Screwdriver to Rectifier (105.017);



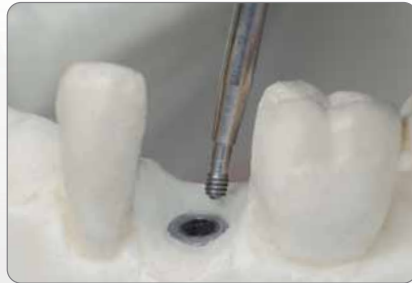
**Step 8:** Remove acrylic resin between the closest support and the Drill Guide;

**Step 9:** Place the Abutment Removal Handle (130.099) between the Guide and the Removal Screw and force the cable towards the apical portion to promote the unlocking of the fractured abutment;



**Step 10:** Remove the Drill Guide, the Abutment Removal Handle and the Removal Screw;

**Step 11:** Manually remove the fractured abutment with the Screw Remover (130.100) by turning in the counter-clockwise direction;



**Step 12:** Check the need for rectifying the internal threads of the implants before inserting the new abutment. If necessary, use the Rectifier Set 1.6 (130.078), one by one, with the Manual Screwdriver to Rectifier (105.017);

**Step 13:** Proceed with placing a new abutment and the prosthetic workflow.

## 4.4 | Summarizing - Neodent® technique: fractured two-piece abutment



Start by using the Fractured Abutment Removal Drill 1.5. Make sure that the head of the screw is totally removed so the abutment can detach from the screw. If you are now able to remove the portion of the abutment from within the implant and the screw fragment the process is complete.



Turn the screw fragment counterclockwise until maximum level with the Screw Remover to stabilize the screw. Cut the fragment with high-rotation drill. The fragment can be turned with the help of an exploratory instrument or with the tip of the drill clockwise;



Use of Bone Removal Drill to remove bone from the implant coronal region;



Attach Drill Guide already attached to support. Make sure to take an x-ray to confirm its position;



Drill Set inside the Drill Guide. Follow the protocol and stop the procedure when the drill stop touches the Drill Guide under constant irrigation;



Produce new threads inside the fractured abutment with the Set of Rectifiers and the manual Screwdriver;



Attach the Removal Screw on the fractured abutment with the 1.2 mm Hexagonal Screwdriver. Remove the attachment in acrylic resin between the closest support and the drill Guide;



Place the Abutment Removal Lever between the Guide and the Removal Screw and force the cable towards the apical portion to promote the unlocking of the fractured abutment. Remove the Drill Guide, the Abutment Removal Handle and the Removal Screw;



Manually remove the fractured abutment with the Screw Remover. Check the need to rectify the implant internal threads. Proceed with placing a new abutment and the prosthetic workflow.

## 5 | ABUTMENT WITH FRACTURED THREADS

This technique is used when the abutment thread fractures inside a Neodent® Grand Morse® Implant. Table 6 illustrates all the implant types and diameters in which this situation might occur. And also, the abutments that could fracture and may be removed after this technique.

### 5.1 | Implants and abutments available for this situation

Implant Connection	Implant Type	Abutments
Grand Morse®	Helix GM® Drive GM® Tltamax GM®	-All abutments and healing abutments are susceptible to this situation

Table 6.

### 5.2 | Necessary products for this situation

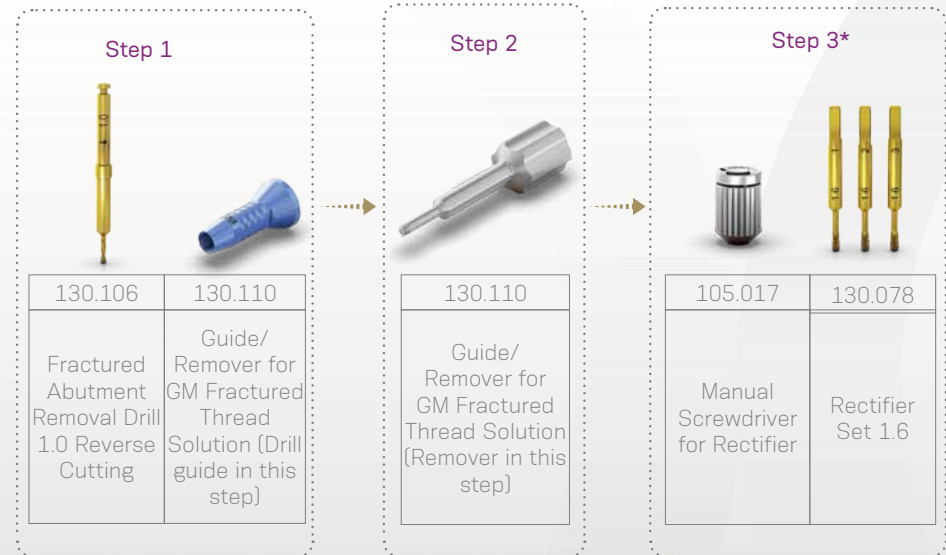


Table 7. Products used as auxiliary to remove fractured threads in Grand Morse® implants.  
\*Optional.

## 5.3 | Step-by-step for removing abutment with fractured threads

Start by performing the anesthesia in the patient and create a gingival flap for optimal implant and abutment visualization;

**Step 1:** Place the Drill Guide on the implant platform and attach it to the closest support (tooth, abutment or prosthesis) with acrylic resin to maintain its position. The indicated acrylic resin to do this procedure is the Pattern LS - JC . Perform light impacts on the Drill Guide with the "Facility Placement Aid" tool (104.056) to stabilize it. Start drilling the fractured screw with the Fractured Abutment Removal Drill 1.0 Reverse Cutting (130.106) spinning counterclockwise, under constant irrigation, inside the surgical contra-angle with 800 rpm. Continue drilling until the drill stop touches the guide platform. After drilling, verify whether the fractured thread is already out with the help of a x-ray. If the screw is still present within the implant, proceed with Step 2;



**Step 2:** After drilling, place the Screw Remover that comes with the respective Drill Guide (130.110) into the thread fragment, manually press against the screw and turn it counterclockwise to remove the fragment.



**Step 3:** Check the need for rectifying the internal threads of the implants before inserting the new abutment. If necessary, use the Rectifier Set 1.6 (130.078), one by one, with the Manual Screwdriver to Rectifier (105.017);

**Step 4:** Proceed with placing a new abutment and the prosthetic workflow.

## 5.4 | Summarizing - Neodent® technique: abutment with fractured threads – GM Implants



Attach Drill Guide to the closest support. Fractured Abutment Removal Drill 1.0 Reverse Cutting inside the Drill Guide. Follow the protocol and stop the procedure when the drill stop touches the Drill Guide;



Place the Screw Remover into the thread fragment, manually press against the screw and turn counterclockwise to remove the fragment. Check the need to rectify the implant internal threads. Proceed with placing a new abutment and the prosthetic workflow.



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