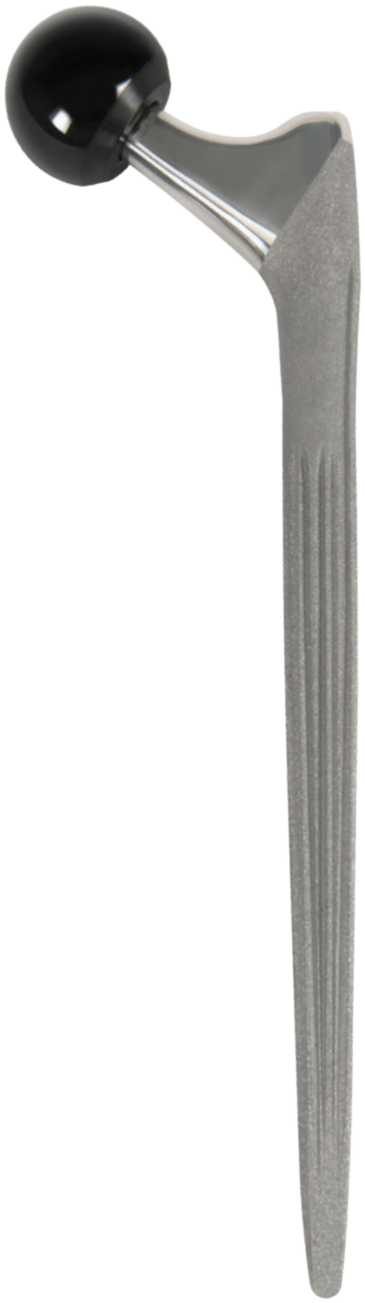
Surgical Technique

smith&nephew

REDAPT◇

Revision Femoral System



REDAPT◇ Revision Femoral System Surgical Technique

Smith & Nephew would like to acknowledge the contributions of the following surgeons with whom we designed the REDAPT Revision Femoral System:

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Nota Bene The technique description herein is made available to the healthcare professional to illustrate the suggested treatment for the uncomplicated procedure. In the final analysis, the preferred treatment is that which addresses the needs of the patient.

This surgical technique is for informational and educational purposes only. It is not intended to serve as medical advice. It is the responsibility of the treating physicians to determine and utilize the appropriate products and techniques according to their own clinical judgment for each of their patients. For more information on the products shown in this surgical technique, including indications for use, contraindications, effects, precautions and warnings, please consult the Instructions for Use (IFU) for the product.

The REDAPT◊ Revision Femoral System by Smith & Nephew is uniquely designed to address the challenges in today's revision hip arthroplasty: fixation in various bone types,[1]* achievement of joint stability, predictable stem position and surgical efficiency. It all starts with ROCKTITE◊ flutes which are intended to provide stable distal fixation in all bone types.

REDAPT is designed to provide reproducible** stem positioning by combining intuitive instrumentation and ROCKTITE◊ flutes for initial fixation.

*Paprosky Classifications I-IV of Femoral Bone Loss

**Final implant position reproduces trial position

REDAPT◇ Sleeveless Stem

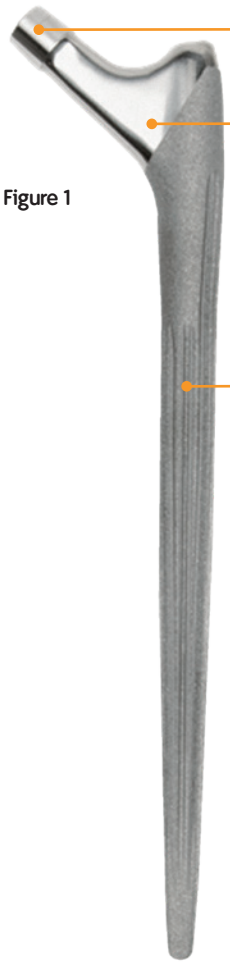


Figure 1

12/14 Head taper

- Compatible with all 12/14 Smith & Nephew heads

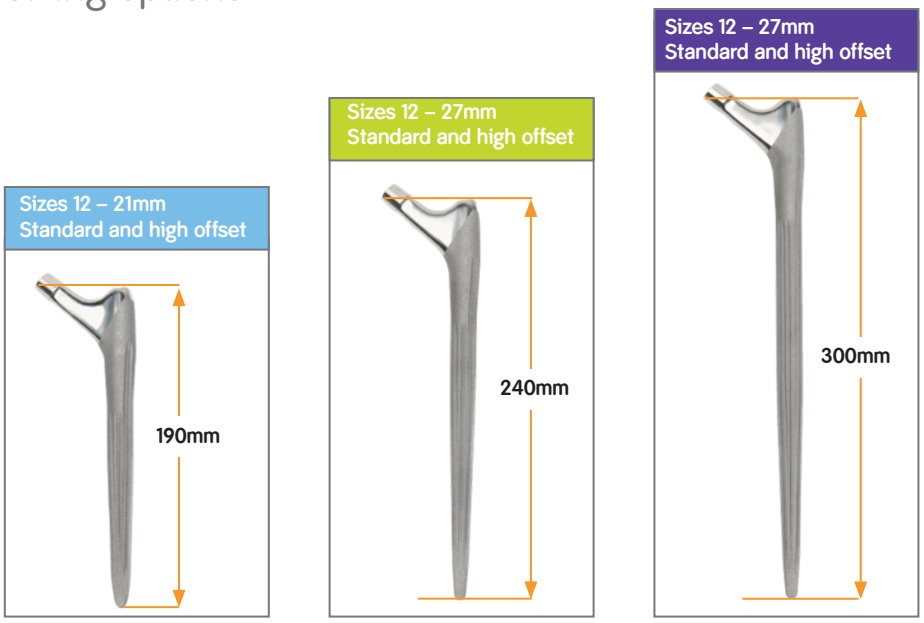
Neck

- Circulotrapezoidal shape for increased range of motion[2-4]
- 2 Offset options; Standard and High

Stem

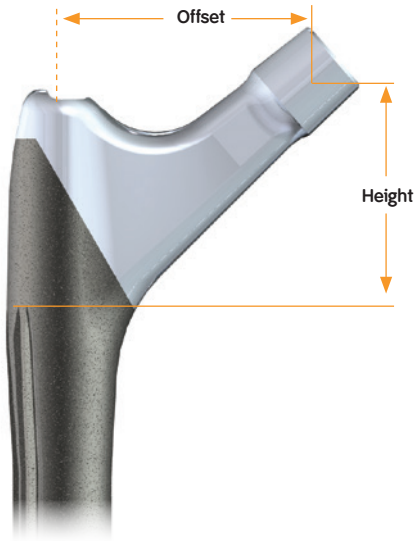
- Forged Titanium tapered, fluted design with proprietary ROCKTITE◇ flutes
- Diameters: 12 – 27mm (1mm increments) (190mm available 12 – 21mm)
- Lengths: 190mm, 240mm and 300mm
  - Stem length is measured from +0 head center at the top of the stem to distal tip of the stem

Sizing options

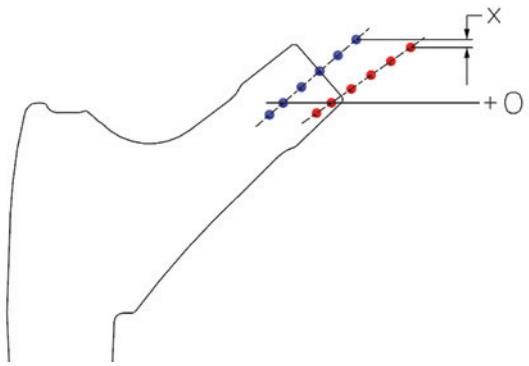


Offset options

Each neck is made with a 12/14 taper for use with compatible cobalt chrome, ceramic and OXINIUM® heads. The circulotrapezoidal neck of the stem provides a greater range of motion over that of a cylindrical neck.[2-4] The following table and illustrations show the total offset and height for each REDAPT® stem.



	Offset option (standard is +0 head center)			
	SO Neck (131°)		HO Neck (125°)	
Size (mm)	Height (mm)	Offset (mm)	Height (mm)	Offset (mm)
12-15	35	37	35	45
16-27	35	42	35	50



High Offset head center difference from Standard Offset	
Head length	Height difference
-3	+0.2 mm
+0	0 mm
+4	-0.3 mm
+8	-0.7 mm
+12	-1.0 mm
+16	-1.3 mm

Instruments

REDAPT® instruments are designed to maximize surgical efficiency and improve accuracy and reproducibility of implant position during the procedure. This is accomplished by reaming and trialing “over the top” of the distal reamers. Distal and proximal reamers are color-coded to provide easy identification of implant sizes and reduce unnecessary instruments.

Distal reamers are intended to allow the surgeon to prepare and size the canal for optimal fit of the tapered, fluted, distally fixed stem. When used in conjunction with trial bodies and necks, the distal reamers function as intramedullary trials which should provide the surgeon with an accurate assessment of implant positioning while reducing the number of instruments and trial components. Distal reamers are available in diameters of 10mm to 21mm in 1.0mm increments in lengths of 190mm and diameters of 10mm to 27mm in lengths of 240mm and 300mm.

The proximal reamers are designed to be used over the distal reamers. By reaming “over the top”, the surgeon is preparing for the proximal aspect of the stem based on the location of the distal reamer. During canal preparation, “over the top” reaming allows the surgeon to maintain the relative position of the proximal and distal reamed cavities to accept the implant of choice. Proximal reamers are available in sizes which correspond to the Sleeveless stem size.

Preoperative planning and templating

Templating

Preoperative templating accomplishes several goals. The primary goal is to determine the intended diameter and length of the revision stem and the remaining femoral bone to support the conical, fluted stem. While all revision situations are unique, in general, 5-7cm of conical reaming of distal cortical bone is desired.

Preoperative planning for a revision hip arthroplasty requires at a minimum a standard set of radiographs, which includes an antero-posterior (A-P) radiograph of the pelvis and a lateral radiograph of the affected hip. Depending on the length of the existing femoral component several additional radiographs may be necessary. Specifically, the A-P and lateral radiographs should include the entire femoral component. On occasion a full-length A-P radiograph of the entire femur may be necessary. As part of the preoperative work-up, the surgeon may consider other imaging modalities such as bone scans and computerized tomography (CT). However, these are not typically necessary for preoperative templating.

Determine the appropriate classification for the femoral revision, for example the Paprosky Revision Classification.[5] This will aid in determining the appropriate type, size and position of the revision stem you will need.

An important goal of templating is achieving the optimal leg length and offset. As with primary THA preoperative planning, establishing proper leg length requires assessment of a number of clinical and radiographic parameters. Establishing the proper reference lines requires using a horizontal line between the inferior portion of the teardrop as well as a horizontal line between the inferior margin of the obtruator foramen and ischial tuberosity. Due to the often distorted anatomy in revision cases, utilizing all three reference lines may be necessary.

Similarly, due to bony defects on the femoral side, a combination of anatomic landmarks such as the superior margin of the greater trochanter and inferior margin of the lesser trochanter must be utilized. These obviously need to be compared to similar points in the contralateral side using the A-P radiograph. Any pelvic obliquities and/or spinal deformity must also be taken into account based on radiographic and clinical assessments. The consideration of all relevant factors is necessary to successfully restore the patient's proper leg length.

Surgeon tip The use of simple wooden blocks during the preoperative physical examination of the patient is very useful, as is a discussion of the patient's perceived length elicited during their preoperative interview.

Standardized A-P radiographs are also critical in assessing proper femoral offset. If there is a native hip on the contralateral side, the proper offset can be determined by the horizontal distance between the center of rotation of the head and anatomic axis of the femur. If there is a well functioning hip prosthesis on the contralateral side, a similar assessment can be made using the REDAPT® templates.

Difficulties sometimes arise when the contralateral hip is deformed or has a malfunctioning THA. Additional problems may be encountered if the ipsilateral acetabulum has failed or has a protrusio deformity. In these cases, it is up to the surgeon to determine intraoperatively what the proper offset should be so as to achieve a hip that is stable without impingement in all physiological positions.

Once the bone stock has been assessed and proper leg length and offset have been determined, the surgeon should template the femur to determine the appropriate stem size. If there is any compromise in the diaphyseal femoral bone, it is recommended that the implant bypass the deficient bone by approximately 5-7cm and that it engages in good diaphsyeal bone.

REDAPT templates are available in digital and acetate formats (Figure 2). Consult your Smith & Nephew representative for assistance in obtaining templates.

Surgeon tip After the preliminary femoral stem size is determined, physically draw these on the A-P radiograph in proper position. Drawing is valuable when selecting the proper implant in conjunction with the intraoperative findings so as to establish the proper implant position.

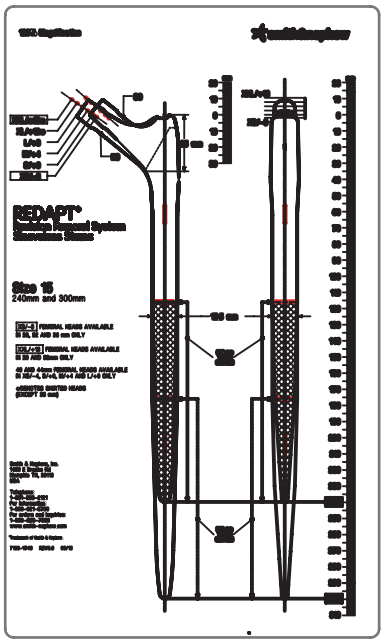


Figure 2

Abbreviated Surgical Technique

Starter ream | Distal ream | Proximal ream | Trial | Implant

Surgical Technique

The following technique should be used when implanting REDAPT Sleeveless monolithic implants. Before surgery, review instrument sets to ensure all instruments are present and working properly.

Removal of a well fixed femoral stem

The removal of a well fixed femoral stem can at times be accomplished using thin osteotomes starting at the proximal portion of the implant. If the ingrowth region of the implant is not abutting cortical bone, this is more likely to be successful. Often, however, the ingrowth region of the stem is more distal and abuts the cortical bone and advancing an osteotome may fracture the femur. A proximal opening osteotomy, typically an extended trochanteric osteotomy (ETO), greatly facilitates stem removal. Once the stem is exposed over the lateral surface, a saw or burring device can be used to disrupt the anterior and posterior surfaces. The medial surface can then be disrupted using a Gigli saw. This maneuver may be tedious and require multiple saws. Once this is accomplished, the ETO is replaced to its original position and held in place with cerclage wires or cables.

Templating is useful in determining the length of the ETO, identifying angular deformities which may require corrective osteotomy, or planning removal of other retained hardware.

Surgeon tip Before performing an ETO, reaming, trialing and inserting a new stem, place a cable or cerclage wire slightly distal to the osteotomy or the existing stem before reaming, trialing and inserting the stem to minimize risk of propagating a crack or fracture.

Neck resection technique when using the stem in a challenging primary application

The femoral neck resection may need to be modified in some challenging primary applications such as angular and rotational deformity. The conical, fluted design is particularly well-suited for these cases due to the stability that is possible with this design. The shoulder of the implant is intended to match the center of the femoral head for average anatomy, and this should correspond to the tip of the greater trochanter. Templating will determine the proper level of the prosthesis with respect to the greater trochanter. Individual adjustments should be made as necessary.

Causes of proximal femoral deformity or dysplasia may require trochanteric osteotomy or femoral osteotomy. The final level of the shoulder of the prosthesis may have to be adjusted in these cases. Placement of the box osteotome and insertion of the canal finder may have to be modified in these cases.

Femoral preparation

The starter reamer can be used to open the proximal aspect of the femur to remove bone from the greater trochanteric or medial calcar regions. The presence of this bone will be largely dependent on the stem previously implanted and the stem removal process. Use the starter reamer to remove lateral bone as shown in (Figure 3). Removing lateral bone is important for maintaining neutral stem placement.

Caution Align etched depth mark on starter reamer to greater trochanter to ensure proper proximal fit of, while taking care not to fracture potentially compromised bone.

Figure 3

Distal reaming

Select the appropriate reamer for the length of stem chosen: 190mm reamers should be used for 190mm stems, 240mm reamers should be used for 240mm stems and 300mm reamers should be used for 300mm stems.

Attach the quick connect to the appropriate distal reamer (Figure 4).

Set power in forward position and ream the distal femoral canal until desired distal fit is achieved. Begin reaming with a distal reamer that is at least 2mm smaller than the templated size or a reamer that has little or no resistance. To minimize potential risk of reaming through the anterior cortex, direct the reamer from anterior to posterior. Care should be taken to avoid bone or surrounding soft tissue when introducing reamers.

Note Do not strike the quick connect or distal reamers.

Surgeon tip Ream until you hear cortical chatter, the reamer contains cortical bone debris and the reamer does not advance under firm axial pressure. The reaming technique may be more aggressive than with a cylindrical porous stem.

Caution Take care when handling reamers as they are sharp and may damage surgical gloves and soft tissue.

Progressively ream in 1mm increments. Note the color code marked on the shaft of select distal reamers. This color will identify available implant sizes and appropriate instrumentation for subsequent steps.

The size of a REDAPT® stem is 0.25mm greater than the equivalently sized reamer, providing a press fit of 0.25mm.

The depth of the reamer is determined by aligning the mark on the quick connect, which represents the +0 head center, with the greater trochanter (Figure 5). If the greater trochanter is not available then an alternative anatomical reference must be made. A ruler can be used to measure from the distal end of the osteotomy to the previous location of the greater trochanter. (Ruler not included in instrument set.) Ream consistently to the determined land mark.

Figure 4

Figure 5

Black line on quick connect indicates alignment of greater trochanter or other predetermined landmark

Upon achieving desired distal fit, disengage the quick connect and power, apply a T-handle and ensure the reamer does not rotate or translate axially. Leave final distal reamer in the canal and note the size.

Proximal reaming

Select a proximal reamer that offers little or no resistance when placed over the shaft of the final distal reamer. Commence proximal reaming. The proximal reamer will rotate, however the distal reamer will act as a guide and should not advance. If the distal reamer advances during proximal reaming, re-ream distally with successively larger distal reamers until desired distal fit is achieved. The distal reamer provides a positive depth stop for the proximal reamer, the surgeon may hear a click or observe that the etched depth mark is aligned to the greater trochanter or other predetermined reference location indicating the proximal reamer has bottomed out (Figure 6). During progressive reaming, pulse lavage may be used to remove bone debris from the canal so it will not impede the proximal reamer from bottoming out on the distal reamer.

Proximal and distal reamers with the same color code represent compatible and available implant options. For example, if the final distal reamer is 17 (blue), the corresponding 17 PF (Sleeveless) proximal reamer is identified by a blue band located near the chuck end (Figure 7). Refer to Proximal Reamer Color Code chart for available options. The following table shows the proximal width dimension for each of the REDAPT◇ sleeveless stem sizes.

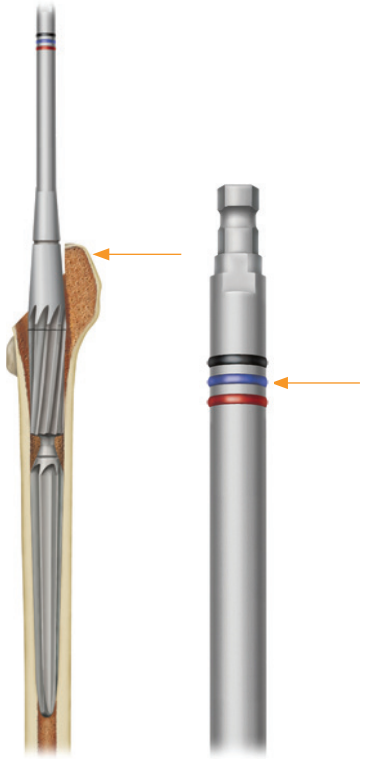


Figure 6

Figure 7

Color coding corresponds to the reamer and stem size

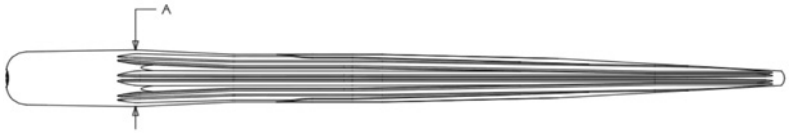
Proximal reamer color code chart

Distal reamer/ implant size	Color of reamer/ implant	Proximal Reamers by number*												
		Starter	1	2	3	4	5	6	7	8	9	10	11	12
12	Purple	PF		12/13XS	12/13S	12/13M	12/13L							
13	Purple	PF		12/13XS	12/13S	12/13M	12/13L							
14	Black		PF		14/15XS	14/15S	14/15M	14/15L						
15	Black		PF		14/15XS	14/15S	14/15M	14/15L						
16	Blue			PF		16/17XS	16/17S	16/17M	16/17L					
17	Blue			PF		16/17XS	16/17S	16/17M	16/17L					
18	Red				PF		18/19XS	18/19S	18/19M	18/19L				
19	Red				PF		18/19XS	18/19S	18/19M	18/19L				
20	Copper					PF		20/21XS	20/21S	20/21M	20/21L			
21	Copper					PF		20/21XS	20/21S	20/21M	20/21L			
22	Gray						PF		22/23XS	22/23S	22/23M	22/23L		
23	Gray						PF		22/23XS	22/23S	22/23M	22/23L		
24	Brown						PF			24/25XS	24/25S	24/25M	24/25L	
25	Brown						PF			24/25XS	24/25S	24/25M	24/25L	
26	White						PF				26/27XS	26/27S	26/27M	26/27L
27	White						PF				26/27XS	26/27S	26/27M	26/27L

* PF = Sleeveless Stem. Only the PF version is available in CE recognizing regions. The XS, S, M, L recognize REDAPT sleeved stem and sleeves that are presently not on the market in the CE recognizing countries.

The following tables illustrate the approximate proximal size of each Sleeveless stem.

Sleeveless Stem	
Color	A dimension
12/13	17.5
14/15	17.5
16/17	19.5
18/19	21.5
20/21	23.5
22/23	25.5
24/25	25.5
26	26.5
27	27.5



Trialing

Assemble trial components over the proximal end of the distal reamer starting with the trial body assembly and finally with neck trials (Figure 8). At this point, establish correct femoral anteversion. Check the trial body assembly for soft tissue and/or bone debris that may impede the components from seating properly.

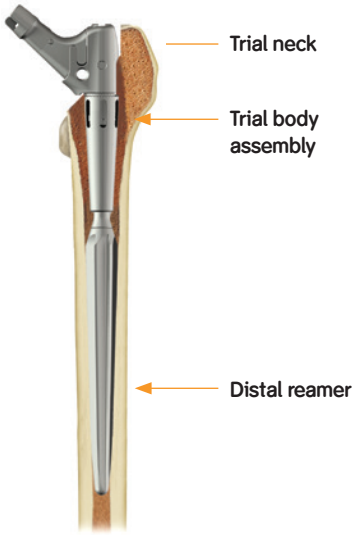


Figure 8

Trial body assemblies have been designed so that the teeth on the underside of the trial body mate with the teeth on the proximal spacer when initially placed. When the components are properly mated the screw on the top of the trial body pops up (see Figure 9).

Secure the trial components together by tightening the screw of the trial body with the trial assembly instrument. Advance the trial body screw until it is flush with the top of the trial body (Figure 10 and 11).

Once the trial body assembly is tightly secured, place the desired trial neck (Standard or High offset) on the trial body. Attach the selected trial head to the trial neck. Perform trial reduction and range of motion (ROM) exercise to confirm proper seating of implant, assess joint tension and ensure there is no impingement to the hip.

Figure 9 **Figure 11**

Figure 10

Adjust trial components and position of trial neck to achieve desired neck offset and neck version (see Figure 12). For version adjustment, loosen trial body screw and rotate trial body to desired position. Use a cautery pen to mark desired position of the implant. Retighten screw and perform trial reduction again to confirm position.

Figure 12

Trial/Reamer removal

Attach trial handle to trial removal hook (Figure 13). To remove the assembled trial components insert the trial removal hook through the cross hole of the trial body assembly (Figure 14). Using gentle force, extract the trial components superiorly, to avoid damage to surrounding tissue. If the removal cross hole is not accessible, the trial body assembly may be removed and the reamer extracted using the reamer removal cap.

Important Reamers and trials are not implantable devices and must be removed prior to implant insertion.

If trialing was not performed, then the distal reamer component can be removed using the reamer removal cap. Screw the reamer removal cap completely onto the threads of the distal reamer, then place the trial removal hook assembled onto the trial handle through the cross hole in the reamer removal tool and use gentle force to extract superiorly (Figure 15).

If resistance occurs when removing the reamer, unscrew the distal reamer removal cap and assemble the quick connect. Use the T-handle to reverse the reamer out of the canal.

Note Do not use other devices or instruments to remove reamer as these may damage the threads.

Figure 13

Figure 14

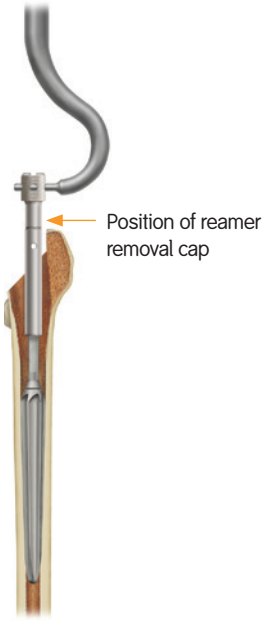


Figure 15

Implant assembly and insertion

Attach the threaded end of the stem inserter to the proximal end of the stem implant (Figure 16). To attach, stand the stem inserter upright so that the threaded tip is pointed up. Ensure that the lever handle is open on the stem inserter and screw the threaded tip into the implant as far as possible. Flip the assembly over so that the stem tip is now pointing down. Engage the frame tines into the slots adjacent to the threaded hole on the stem. Rotate the pommel until the assembly is secure.

Caution Prior to use, inspect the inserter to ensure that the threads are not damaged and the tip is not bent. Do not over tighten the pommel as this may cause it to lock up during repeated impacting. Close the lever handle to lock the pommel.

Note Take care to protect the taper during the attachment of the stem inserter.

Orient the stem to achieve the desired version. Insert the stem into the femoral canal using hand pressure. Once the stem is in the desired position, use a mallet to seat the stem. Once the stem is implanted, release the lever on the inserter and unscrew the pommel to release the instrument from the stem. Trialing may be repeated with a trial head on the implant if desired.

Ensure the stem taper is clean and dry before placing the desired femoral head implant on the trunnion. Impact head implant component with the head impaction tool. Correct selection of the head length, cup and stem positioning are important. Muscle looseness and/or mal-positioning of components may result in loosening, subluxation, dislocation and/or fracture of the component and/or bone. Perform final ROM with implants in position.

Figure 16

Proximal support

Once the final components are implanted, the osteotomy is reduced and secured with cables. In order to reduce the osteotomized bone fragment in its anatomic position, it may be necessary to shape the endosteal surface of the bone fragment with a curette or burr to fit against the lateral position of the femoral component.

Caution The implant must contact bone, bone filler, or secured allograft to provide adequate secondary support.

Reattach the trochanteric segment using ACCORD® Cables (Figure 17) or other appropriate proximal support.

Caution To gain adequate proximal support and reduce the risk of implant failure, the use of adjunctive devices such as cables, cerclage wires, struts, etc. is recommended.

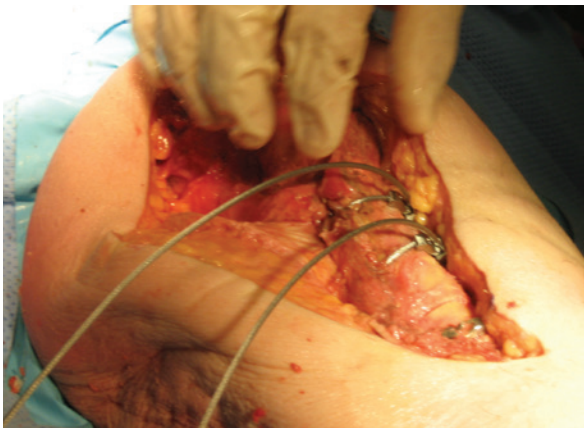
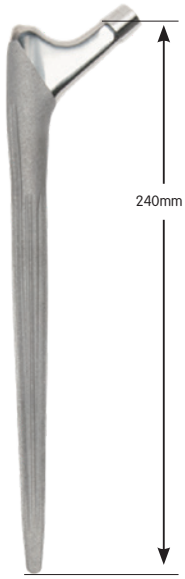


Figure 17

Catalog information

REDAPT° Sleeveless Revision Stems

	190Mm		240Mm		300Mm	
Size	**Std Offset**	**Hi Offset**	**Std Offset**	**Hi Offset**	**Std Offset**	**Hi Offset**
12	7135-4461	7135-4478	7135-4701	7135-4718	7135-4736	7135-4754
13	7135-4462	7135-4479	7135-4702	7135-4719	7135-4737	7135-4755
14	7135-4463	7135-4481	7135-4703	7135-4721	7135-4738	7135-4756
15	7135-4464	7135-4482	7135-4704	7135-4722	7135-4739	7135-4757
16	7135-4465	7135-4483	7135-4705	7135-4723	7135-4741	7135-4758
17	7135-4466	7135-4484	7135-4706	7135-4724	7135-4742	7135-4759
18	7135-4467	7135-4485	7135-4707	7135-4725	7135-4743	7135-4761
19	7135-4468	7135-4486	7135-4708	7135-4726	7135-4744	7135-4762
20	7135-4469	7135-4487	7135-4709	7135-4727	7135-4745	7135-4763
21	7135-4471	7135-4488	7135-4711	7135-4728	7135-4746	7135-4764
22	-	-	7135-4712	7135-4729	7135-4747	7135-4765
23	-	-	7135-4713	7135-4731	7135-4748	7135-4766
24	-	-	7135-4714	7135-4732	7135-4749	7135-4767
25	-	-	7135-4715	7135-4733	7135-4751	7135-4768
26	-	-	7135-4716	7135-4734	7135-4752	7135-4769
27	-	-	7135-4717	7135-4735	7135-4753	7135-4771



REDAPT° Revision Femoral System Implant Sets

Sleeveless Stems

Catalog Item	Description	Contents
7135-4460	190mm Set	Sizes 12-21, Standard and High Offset
7135-4470	240mm Set	Sizes 12-21, Standard and High Offset
7135-4480	300mm Set	Sizes 12-21, Standard and High Offset
7135-4490	Large Size Stem Set	Sizes 22-27, 240mm and 300mm lengths, Standard and High Offset

REDAPT° Distal Reamers

Size	190mm	240mm	300mm
10	7135-5341	7135-5001	7135-5038
11	7135-5342	7135-5003	7135-5042
12	7135-5343	7135-5005	7135-5044
13	7135-5344	7135-5007	7135-5046
14	7135-5345	7135-5009	7135-5048
15	7135-5436	7135-5011	7135-5051
16	7135-5437	7135-5013	7135-5053
17	7135-5438	7135-5015	7135-5055
18	7135-5439	7135-5017	7135-5057
19	7135-5441	7135-5019	7135-5059
20	7135-5442	7135-5022	7135-5062
21	7135-5443	7135-5024	7135-5064
22	-	7135-5026	7135-5066
23	-	7135-5028	7135-5068
24	-	7135-5030	7135-5071
25	-	7135-5032	7135-5073
26	-	7135-5034	7135-5075
27	-	7135-5036	7135-5077

Color indicator on reamer shaft corresponds to available implant sizes.

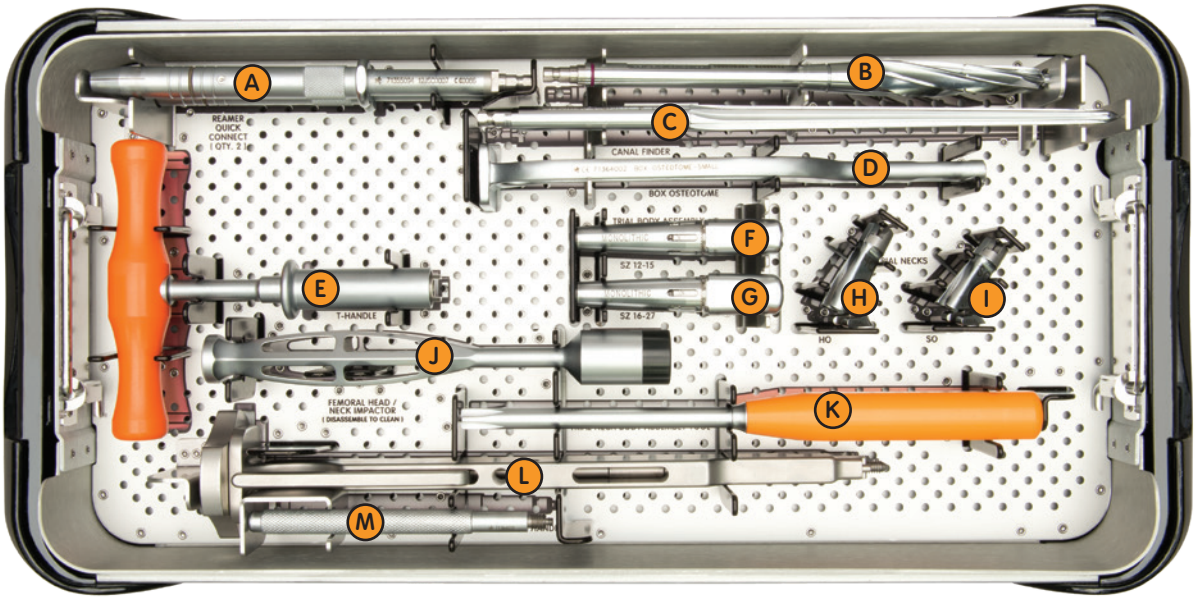
REDAPT Proximal Reamers

Catalog Item	Description
7135-5079	REDAPT Proximal Reamer-Starter and Size PF 12/13
7135-5081	REDAPT Proximal Reamer #1-11 PF14/15
7135-5082	REDAPT Proximal Reamer #2-PF16/17
7135-5083	REDAPT Proximal Reamer #3-PF18/19
7135-5084	REDAPT Proximal Reamer #4-PF20/21
7135-5085	REDAPT Proximal Reamer #5-PF22+
7135-5086*	REDAPT Proximal Reamer #6-14/15L 16/17M 18/19S 20/21XS
7135-5087*	REDAPT Proximal Reamer #7-16/17L 18/19M 20/21S 22/23XS
7135-5088*	REDAPT Proximal Reamer #8-18/19L 20/21M 22/23S 24/25XS
7135-5089*	REDAPT Proximal Reamer #9-20/21L 22/23M 24/25S 26/27XS
7135-5091*	REDAPT Proximal Reamer #10-22/23L 24/25M 26/27S
7135-5092*	REDAPT Proximal Reamer #11-24/25L 26/27M
7135-5093*	REDAPT Proximal Reamer #12-27L

*Corresponding sleeved stems are not currently available in CE recognizing regions.

7135-5083

7135-5079



REDAPT° Common Instrument Tray
Cat. No. 7135-5410

Catalog Item	Description	
7135-5094	Reamer Quick Connect	A
7135-5079	Proximal Reamer Starter And Size Pf 12/13	B
7136-4001	Canal Finder	C
7136-4002	Box Osteotome	D
7136-4006	T-Handle	E
7135-4631	Trial Body Assembly, Size 12-15	F
7135-4632	Trial Body Assembly, Size 16-27	G
7136-4636	High Offset Trial Neck	H
7135-4635	Standard Offset Trial Neck	I
7136-0093	Femoral Head/Neck Impactor	J
7135-4174	Trial Body Assembly Tool	K
7136-5705	ANTHOLOGY° Stem Inserter (Posterior Hard)	L
7136-4012	Anteversion Handle	M


7136-4001


7135-5094


7135-4174


7135-4631


7135-4632


7135-4636

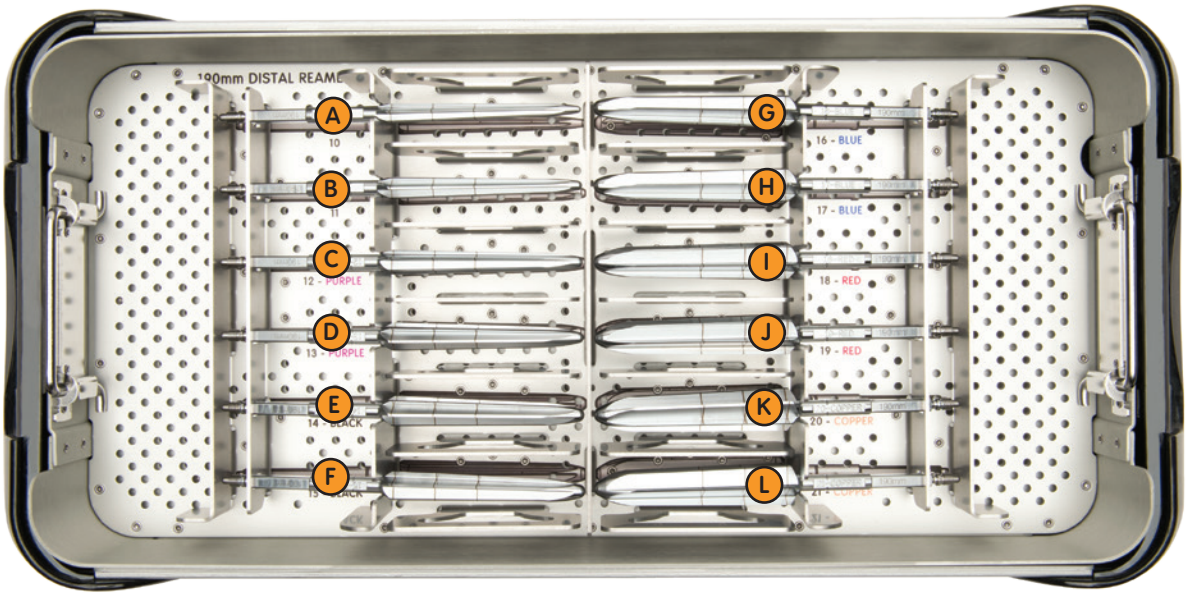

7136-0093


7136-4006


7136-4002

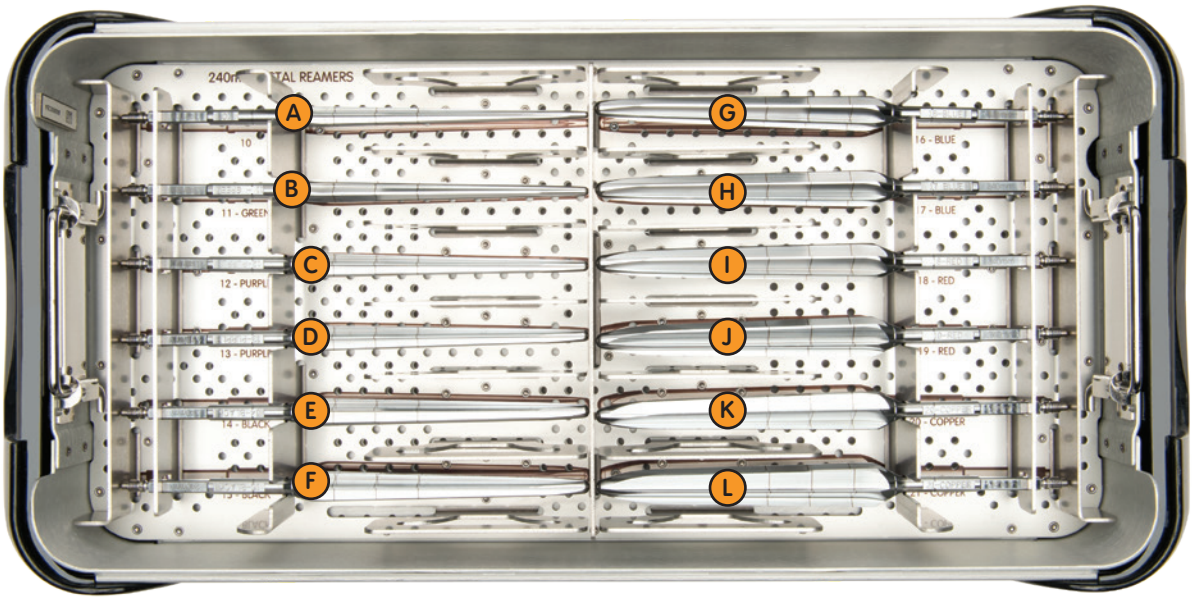

7136-4012


7136-5705



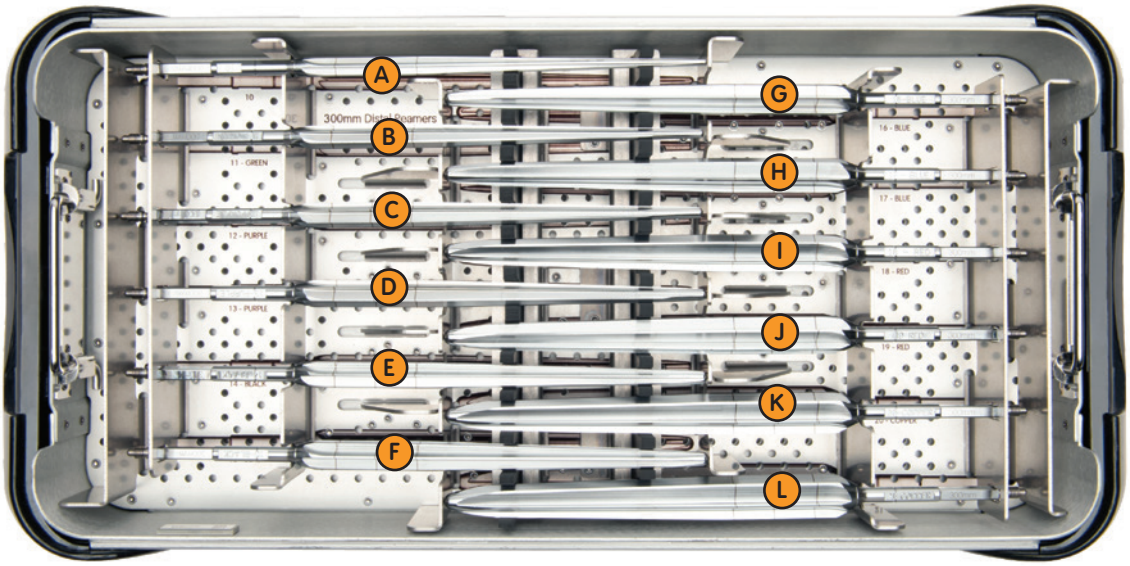
REDAPT° 190mm Distal Reamer Tray
Cat. No. 7135-5400

Catalog Item	Description	
7135-5341	Distal Reamer 190mm Size 10	A
7135-5342	Distal Reamer 190mm Size 11	B
7135-5343	Distal Reamer 190mm Size 12	C
7135-5344	Distal Reamer 190mm Size 13	D
7135-5345	Distal Reamer 190mm Size 14	E
7135-5436	Distal Reamer 190mm Size 15	F
7135-5437	Distal Reamer 190mm Size 16	G
7135-5438	Distal Reamer 190mm Size 17	H
7135-5439	Distal Reamer 190mm Size 18	I
7135-5441	Distal Reamer 190mm Size 19	J
7135-5442	Distal Reamer 190mm Size 20	K
7135-5443	Distal Reamer 190mm Size 21	L



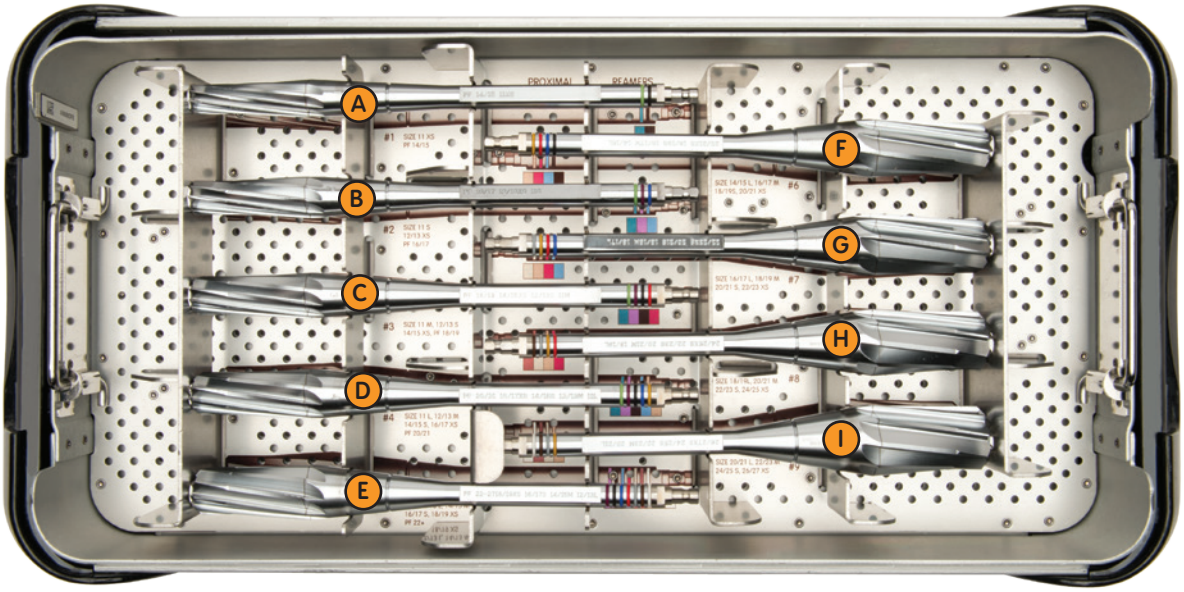
REDAPT° 240mm Distal Reamer Tray
Cat. No. 7135-5000

Catalog Item	Description	
7135-5001	Distal Reamer 240mm Size 10	A
7135-5003	Distal Reamer 240mm Size 11	B
7135-5005	Distal Reamer 240mm Size 12	C
7135-5007	Distal Reamer 240mm Size 13	D
7135-5009	Distal Reamer 240mm Size 14	E
7135-5011	Distal Reamer 240mm Size 15	F
7135-5013	Distal Reamer 240mm Size 16	G
7135-5015	Distal Reamer 240mm Size 17	H
7135-5017	Distal Reamer 240mm Size 18	I
7135-5019	Distal Reamer 240mm Size 19	J
7135-5022	Distal Reamer 240mm Size 20	K
7135-5024	Distal Reamer 240mm Size 21	L



REDAPT° 300mm Distal Reamer Tray
Cat. No. 7135-2900

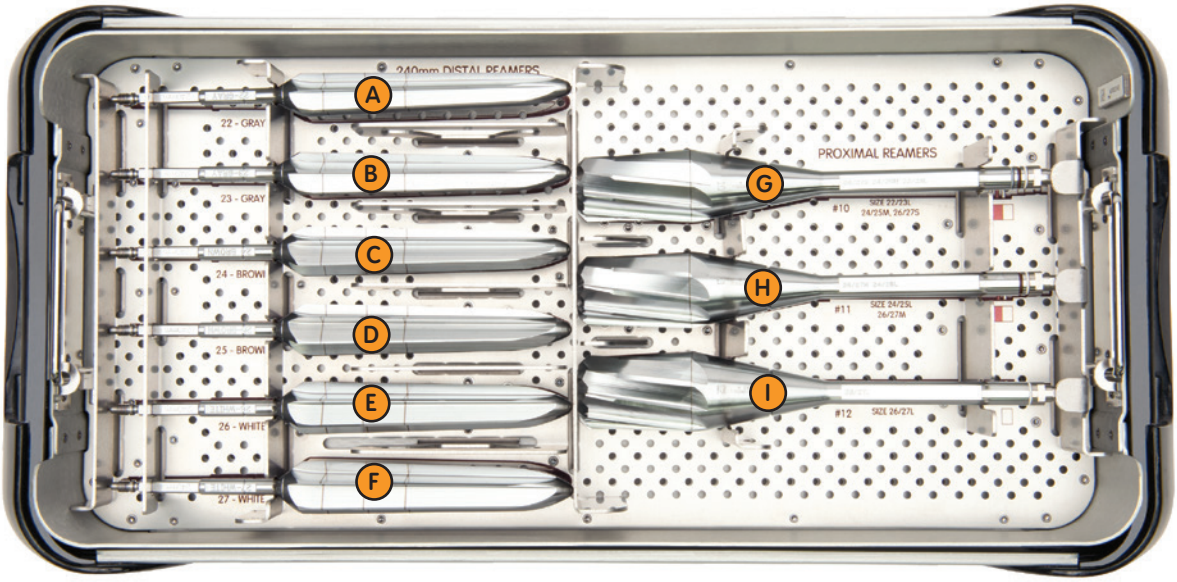
Catalog Item	Description	
7135-5038	Distal Reamer 300mm Size 10	A
7135-5042	Distal Reamer 300mm Size 11	B
7135-5044	Distal Reamer 300mm Size 12	C
7135-5046	Distal Reamer 300mm Size 13	D
7135-5048	Distal Reamer 300mm Size 14	E
7135-5051	Distal Reamer 300mm Size 15	F
7135-5053	Distal Reamer 300mm Size 16	G
7135-5055	Distal Reamer 300mm Size 17	H
7135-5057	Distal Reamer 300mm Size 18	I
7135-5059	Distal Reamer 300mm Size 19	J
7135-5062	Distal Reamer 300mm Size 20	K
7135-5064	Distal Reamer 300mm Size 21	L



REDAPT° Proximal Reamer Tray
Cat. No. 7135-5080

Catalog Item	Description	
7135-5081	Proximal Reamer #1 Size PF 14/15	A
7135-5082	Proximal Reamer #2 Size PF 16/17	B
7135-5083	Proximal Reamer #3 Size PF 18/19	C
7135-5084	Proximal Reamer #4 Size PF 20/21	D
7135-5085	Proximal Reamer #5 Size PF22+	E
7135-5086*	Proximal Reamer #6 Size 14/15L 16/17M 18/19S 20/21XS	F
7135-5087*	Proximal Reamer #7 Size 16/17L 18/19M 20/21S 22/23XS	G
7135-5088*	Proximal Reamer #8 Size 18/19L 20/21M 22/23S 24/25XS	H
7135-5089*	Proximal Reamer #9 Size 20/21L 22/23M 24/25S 26/27XS	I

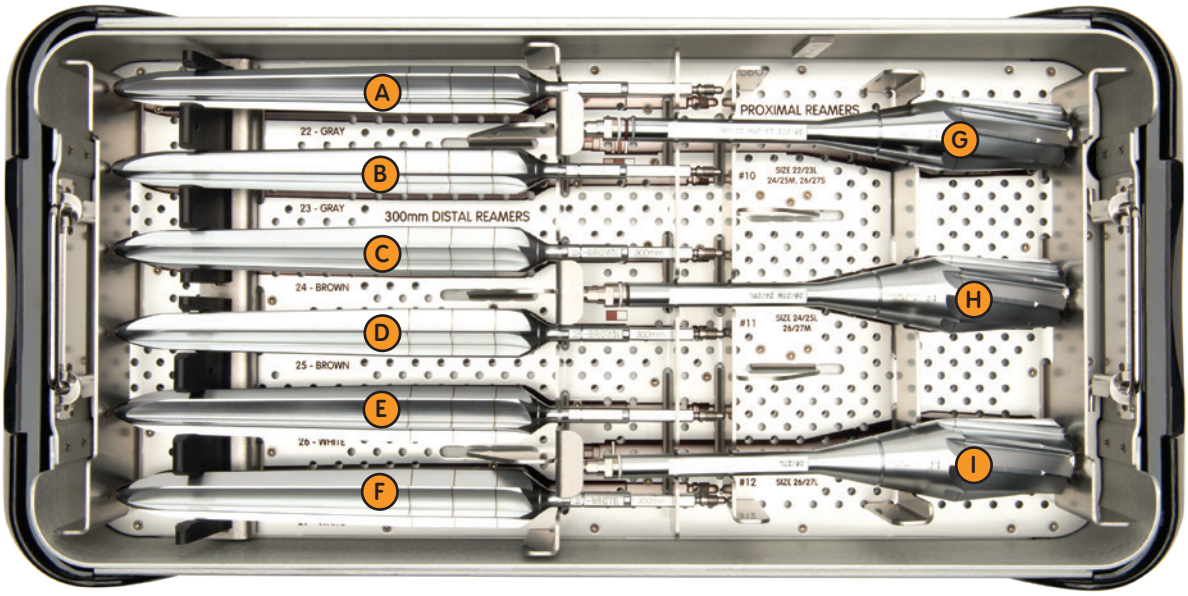
*Corresponding sleeved stems are not currently available in CE recognizing regions.



REDAPT° 240mm Large Size Reamers
Cat. No. 7135-2910

Catalog Item	Description	
7135-5026	Distal Reamer 240mm Size 22	A
7135-5028	Distal Reamer 240mm Size 23	B
7135-5030	Distal Reamer 240mm Size 24	C
7135-5032	Distal Reamer 240mm Size 25	D
7135-5034	Distal Reamer 240mm Size 26	E
7135-5036	Distal Reamer 240mm Size 27	F
7135-5091*	Proximal Reamer #10 Size 22/23L 24/25M 26/27S	G
7135-5092*	Proximal Reamer #11 Size 24/25L 26/27M	H
7135-5093*	Proximal Reamer #12 Size 26/27L	I

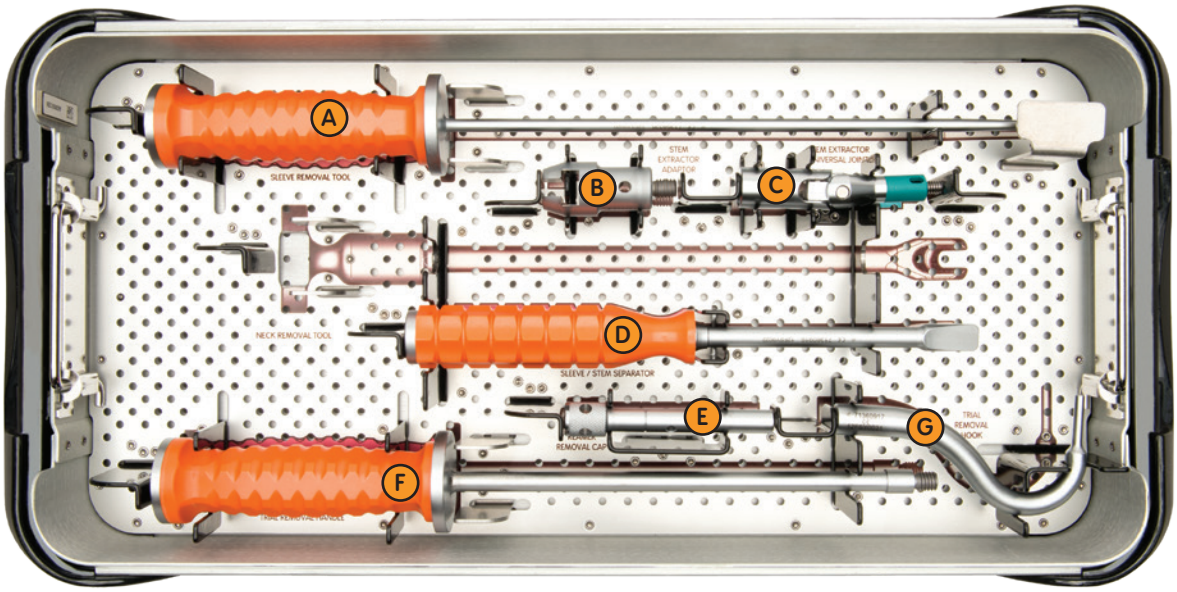
*Corresponding sleeved stems are not currently available in CE recognizing regions.



REDAPT° 300mm Large Size Reamers
Cat. No. 7135-2920

Catalog Item	Description	
7135-5066	Distal Reamer 300mm Size 22	A
7135-5068	Distal Reamer 300mm Size 23	B
7135-5071	Distal Reamer 300mm Size 24	C
7135-5073	Distal Reamer 300mm Size 25	D
7135-5075	Distal Reamer 300mm Size 26	E
7135-5077	Distal Reamer 300mm Size 27	F
7135-5091*	Proximal Reamer #10 Size 22/23L 24/25M 26/27S	G
7135-5092*	Proximal Reamer #11 Size 24/25L 26/27M	H
7135-5093*	Proximal Reamer #12 Size 26/27L	I

*Corresponding sleeved stems are not currently available in CE recognizing regions.



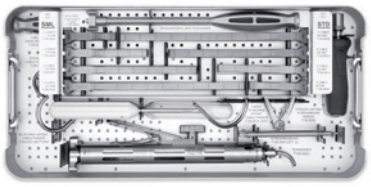
REDAPT® Extraction Tray
Cat. No. 7135-5100

Catalog Item	Description	
7136-4036	EMPERION® Sleeve Removal Tool	A
7135-5108	Stem Extractor Adaptor	B
7135-5107	Stem Extractor Universal Joint	C
7136-0919	Sleeve/Stem Separator	D
7135-5109	Reamer Removal Cap	E
7136-0920	Trial Removal Handle	F
7136-0917	Trial Removal Hook	G

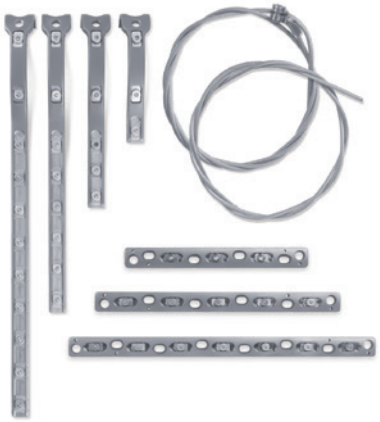
7136-0917 7136-0919 7136-0920 7136-4036 7135-5107 7135-5108 7135-5109

ACCORD® Cable System

Catalog Item	Description
7136-0005	Instrument Set



7134-5000	Implant Set Includes: all titanium small and standard grips 3 titanium fracture management plates 12 cobalt chrome cables with clamp 12 cobalt chrome cables for grips/plates



RENOVATION® Removal Instrument Set

Catalog Item	Description
7136-7575	Instrument Set

Notes: _____

Notes: _____

Reference

1. Gabor J, Padilla J, Feng J, et al. Short-term outcomes with the REDAPT monolithic, tapered, fluted, grit-blasted, forged titanium revision femoral stem. Bone Joint J. 2020;102-b(2):191-197.

2. Barrack R, Butler R, Laster D, Andrews P. Stem design and dislocation after revision total hip arthroplasty: clinical results and computer modeling. J Arthroplasty. 2001;16(8):8-12.

3. Thornberry R, Lavernia C, Barrack R, Tozakoglou E. The effects of neck geometry in acetabular design on motion to impingement. Poster presented at: J. Arthroplasty 1999.

4. Barrack R, Lavernia C, Ries M, Thornberry R, Tozakoglou E. Virtual reality computer animation of the effect of component position and design on stability after total hip arthroplasty. Orthop Clin North Am. 2001;32(4):569-577.

5. Sporer, Scott M, Paprosky, Wayne G. Revision Total Hip Arthroplasty: The Limits of Fully Coated Stems. *Clinical Orthopaedics and Related Research*. 2003;417:203-209.

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