Surgical Technique

smith&nephew

SPECTRON®

Revision Hip System

SPECTRON® Revision Hip System

Surgical technique completed
in conjunction with:

J. Rod Davey, M.D., F.R.C.S.
Acting Head of Orthopaedic Surgery,
The Toronto Hospital
Assistant Professor of the Department of Surgery,
University of Toronto
Toronto, Ontario, Canada

Paul Di Cesare, M.D., F.A.C.S.
Hospital for Joint Diseases
Orthopaedic Institute
Director of Musculoskeletal Research Center
Co-Director of Surgical Arthritis Service
Assistant Professor of Orthopaedic Surgery,
New York University School of Medicine
New York, New York

Henrik Malchau, M.D., Ph.D.
Sahlgrenska University Hospital
Professor
Department of Orthopaedics
Göteborg, Sweden

Nota Bene: The following technique is for informational and educational purposes only. It is not intended to serve as medical advice. It is the responsibility of 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 product, including its indications for use, contraindications, and product safety information, please refer to the product's label and the Instructions for Use.

Introduction

The SPECTRON® Cemented Revision System has a clinical history of use of over 20 years.[1,2] The revision femoral stems contain the same design features of the primary SPECTRON stems.

Circulotrapezoidal Neck — design provides increased range of motion compared to a circular neck of the same strength.[3,4]

Anterior/Posterior Grooves — intended to increase rotational stability without increasing cement stresses.

Longitudinal Stem Taper — designed to distribute the stresses through the length of the implant and enhance compressive loading of the cement.[5]

Forged Cobalt Chrome Material — material of choice for cemented stems

The system is comprised of 9 implants in various stem lengths and head/neck offsets.

Long Straight Implant — designed for revision of femoral distal defects such as holes, windows, or fractures around the end of the previously implanted stem.

The instrumentation is designed for a broach-only technique with a minimum number of procedural steps. This is intended to make for a simple, straightforward surgical technique.

Stem Specifications

For use with Smith & Nephew 12/14 femoral heads only.

Stem Size	Neck Angle	Stem Length	Distal Cross Section	A-P Width	M-L Width
LS – Small	131°	165, 195, 225 mm	8, 7, 6 mm	11 mm	21 mm
LS – Medium	131°	165, 195, 225 mm	9, 8, 6 mm	14 mm	25 mm
LS – Large	131°	165, 195, 225 mm	12, 10, 9 mm	16 mm	28 mm

Neck Length mm When Femoral Head Component Selected Is:						
Size	–3	+0	+4	+8	+12	+16
LS – Small	37	40	44	48	52	56
LS – Medium	39	42	46	50	54	58
LS – Large	39	42	46	50	54	58

Neck Offset mm When Femoral Head Component Selected Is:						
Size	–3	+0	+4	+8	+12	+16
LS – Small	38	40	43	46	49	52
LS – Medium	43	45	48	51	54	57
LS – Large	43	45	48	51	54	57

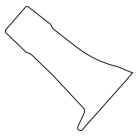
Neck Height mm When Femoral Head Component Selected Is:						
Size	–3	+0	+4	+8	+12	+16
LS – Small	28	30	33	35	38	40
LS – Medium	28	30	33	35	38	40
LS – Large	28	30	33	35	38	40

Not Actual Size

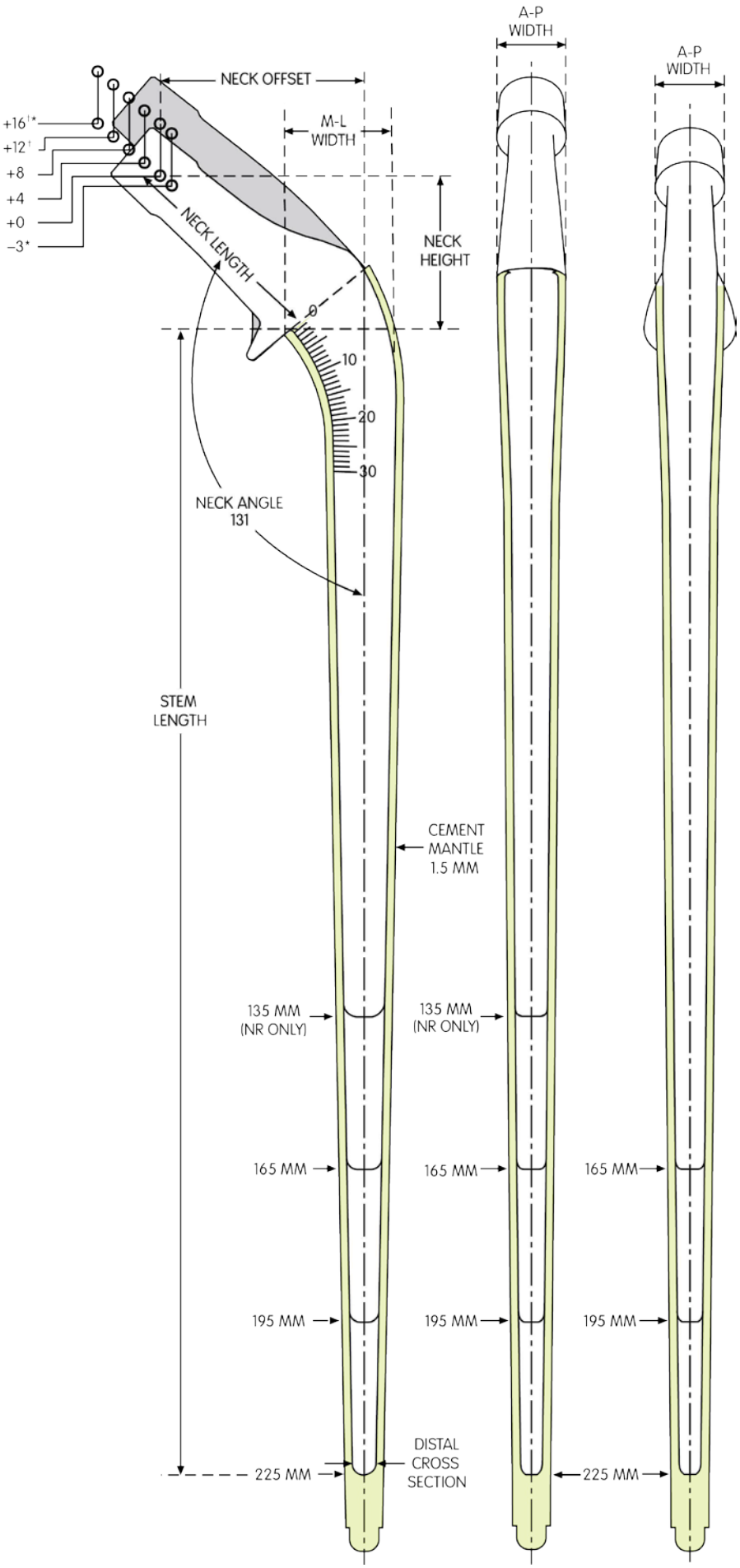
-3 CoCr and OXINIUM® femoral heads available in 28, 32 and 36mm only

+16 CoCr and OXINIUM femoral heads available in 28 mm and 32 mm only.

† Denotes skirted head

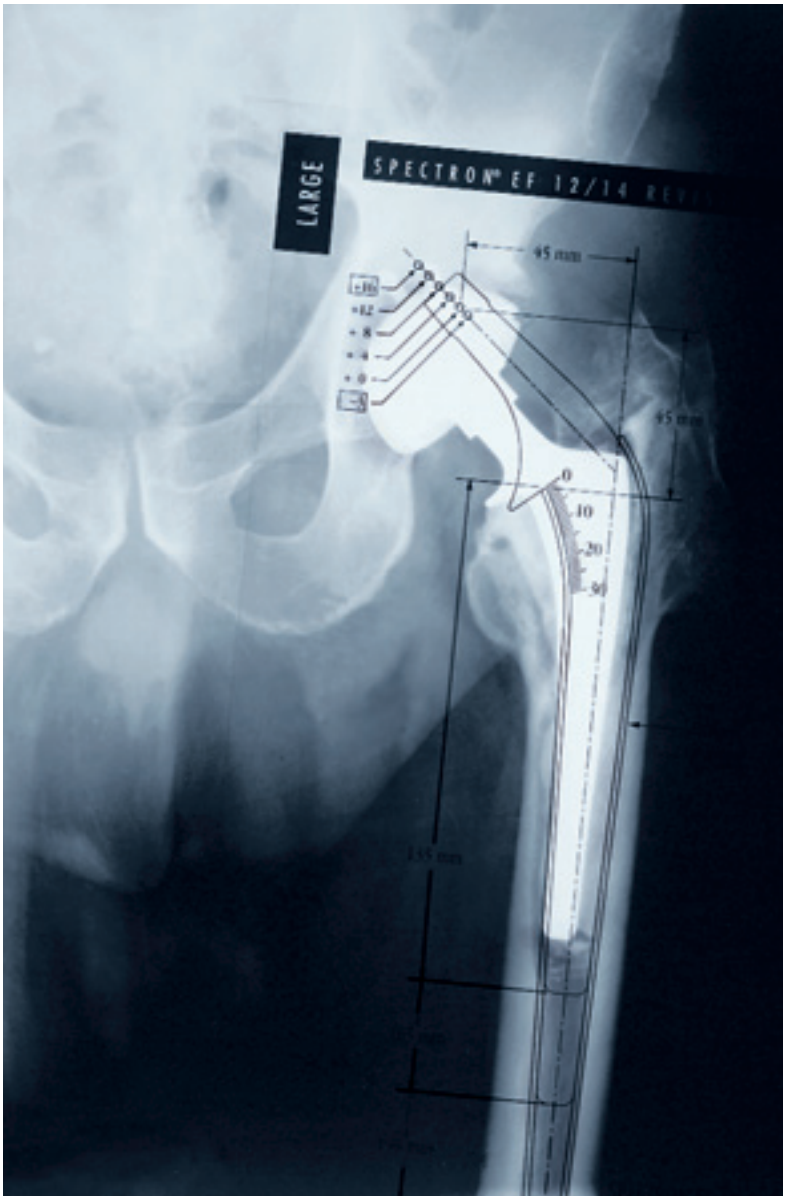


Long Straight



NOTE: For illustration purposes only. Surgical Templates are available by contacting your Smith & Nephew Representative or Customer Service.

Templating

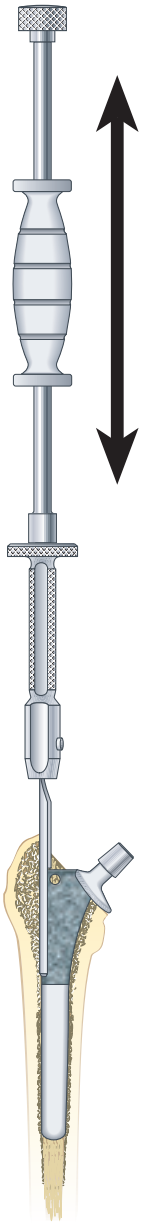


It is of high importance to preoperatively plan the procedure at hand. Templating is a vital part of this planning stage and should be done before the start of surgery.

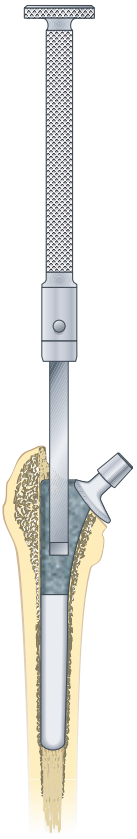
Place the template over the X-ray of the hip to be operated on. Determine the stem size and length of implant that will best fit the canal. Match the indicated length of the femoral head on the template to the center of femoral head rotation. The SPECTRON® Revision hip system offers a wide range of head/neck lengths designed for a precise duplication of the patient's hip center. Make a notation of which length of the femoral head is to be used. Count the graduation marks from the indicated osteotomy level to the top of the lesser trochanter on the medial graduation scale of the Long Straight. Make a notation of the measurement.

RENOVATION® Implant Removal System

The following is a guide to Smith & Nephew's RENOVATION Implant Removal instrumentation and suggested techniques employed in prosthesis removal.



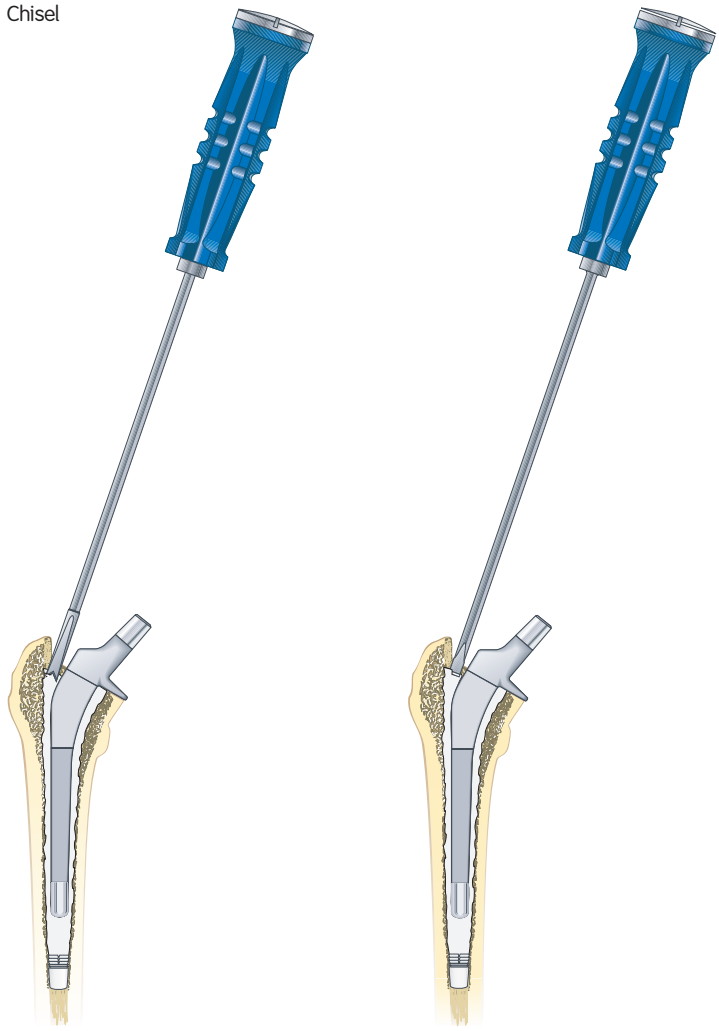
Radial Osteotome Blades
Four Radial Osteotome Blades (71369310, 71369312, 71369314, and 71369316) and Short and Long Quick-Coupling Osteotome Handles (71367548 and 71367549) can be used to disrupt biological fixation in the **lateral** portion of a proximally porous-coated femoral component. The blades are rigid and curved to match the lateral contour of the implant. One edge is bevelled to ensure cutting against the implant. The bevelled side should be placed away from the implant, towards the bone. The Small Slap Hammer (71367541) is easily attached to the osteotome handle for insertion and extraction.

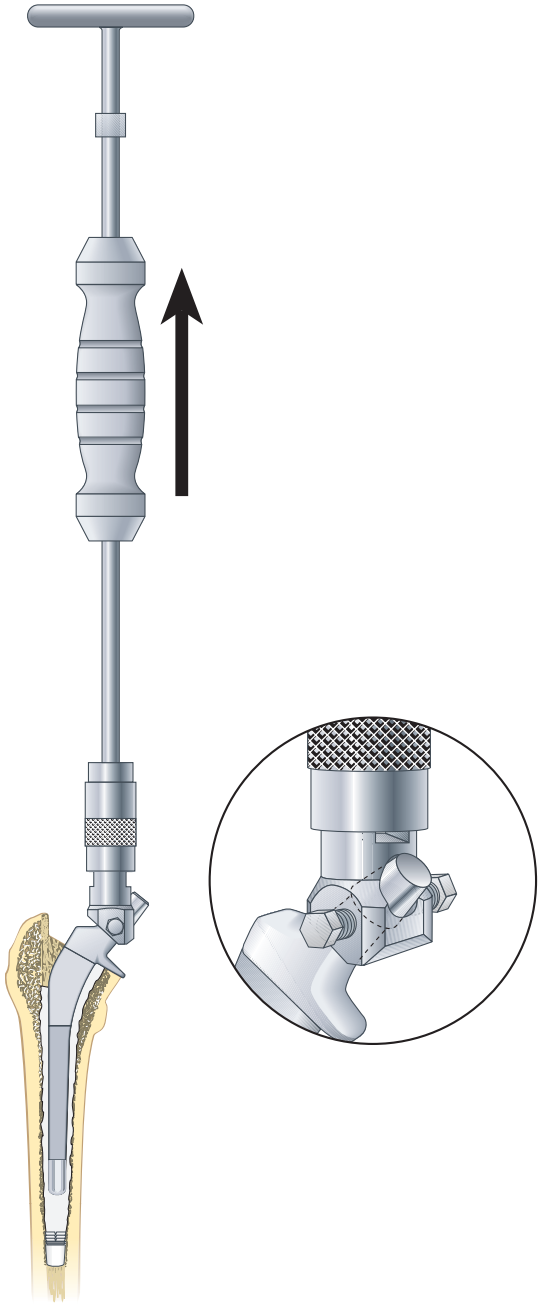


Thin Osteotome Blades
A variety of sizes in the Thin Osteotome Blades and Short and Long Quick-Coupling Handles (71367548 and 71367549) can be used to disrupt biological fixation in the **anterior** and **posterior** portion of a proximally porous-coated femoral component. The blades are flexible enough to follow the contour of a femoral or acetabular component, and one edge is bevelled to ensure cutting against the implant. The bevelled side should be placed away from the implant, toward the bone. After disrupting areas of ingrowth with the osteotomes, attempt to extract the stem using moderate force. If the stem cannot be extracted without risk of fracturing the femur, an extended trochanteric osteotomy may be required. An extended trochanteric osteotomy is often required for extensively porous-coated stems.

"V" Splitter

Chisel



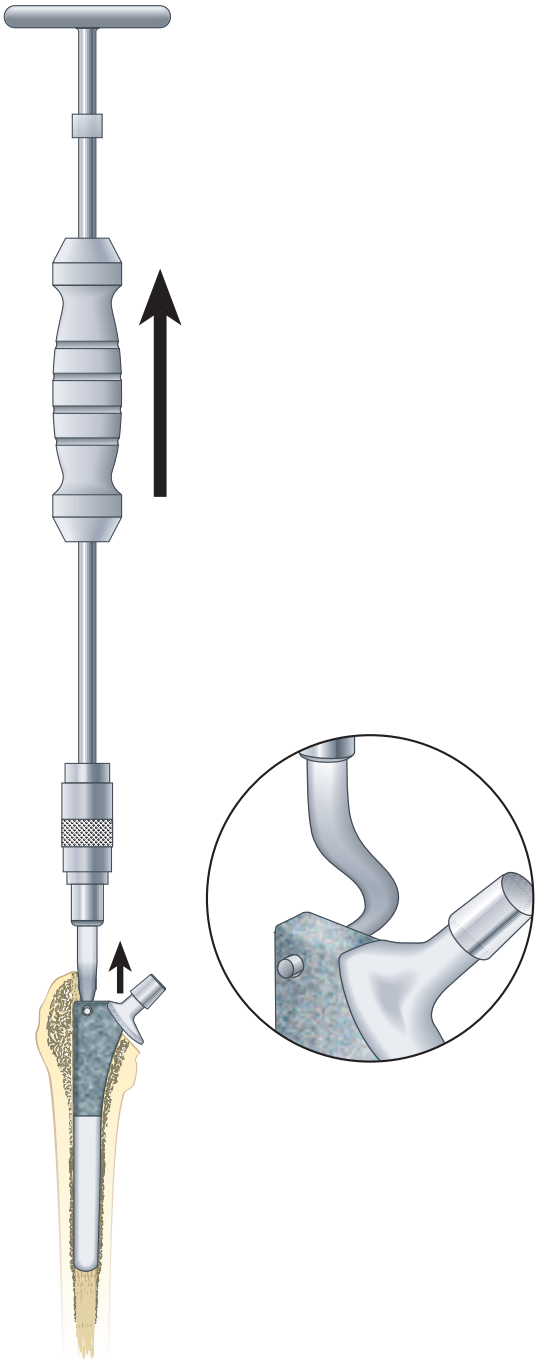


"V" Splitter and Chisel

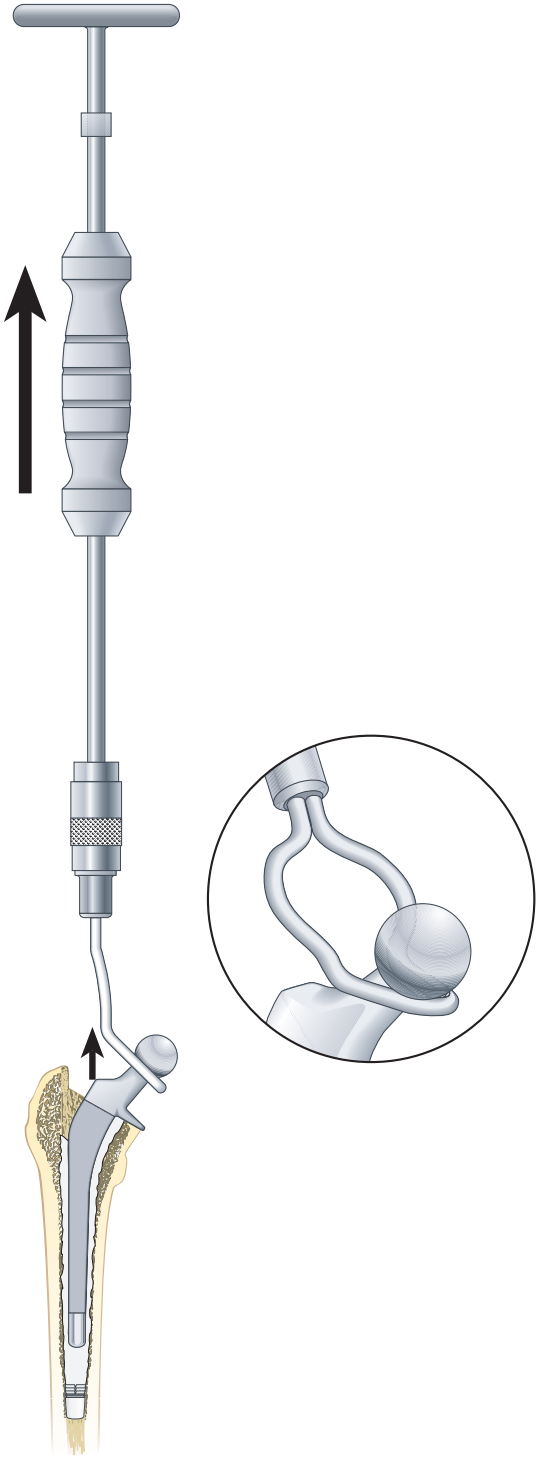
The "V" Splitter (71367561) and Chisel (71369308) are used to fragment and remove any cement proximal and lateral to the prosthesis. Before attempting to extract a cemented femoral prosthesis, cement should be removed from the lateral aspect of the femoral stem or fracture of the greater trochanter may occur. The "V" Splitter and Chisel can also be used to fragment cement in the proximal region after the prosthesis is removed.

Modular Stem Extractor

When the proximal cement has been adequately removed or biological fixation has been disrupted, the Modular Stem Extractor (71367555) can be used in conjunction with the Large Slap Hammer (71367553) to extract the prosthesis. The Modular Stem Extractor is designed so that the line of action is parallel to the longitudinal axis of the prosthesis. If the extractor does not readily remove the stem, further interface disruption must be accomplished or fracture of the surrounding femur may occur. The two locking screws on the Modular Adapter should be positioned behind the taper and tightened with the T-Handle Wrench (71367556).



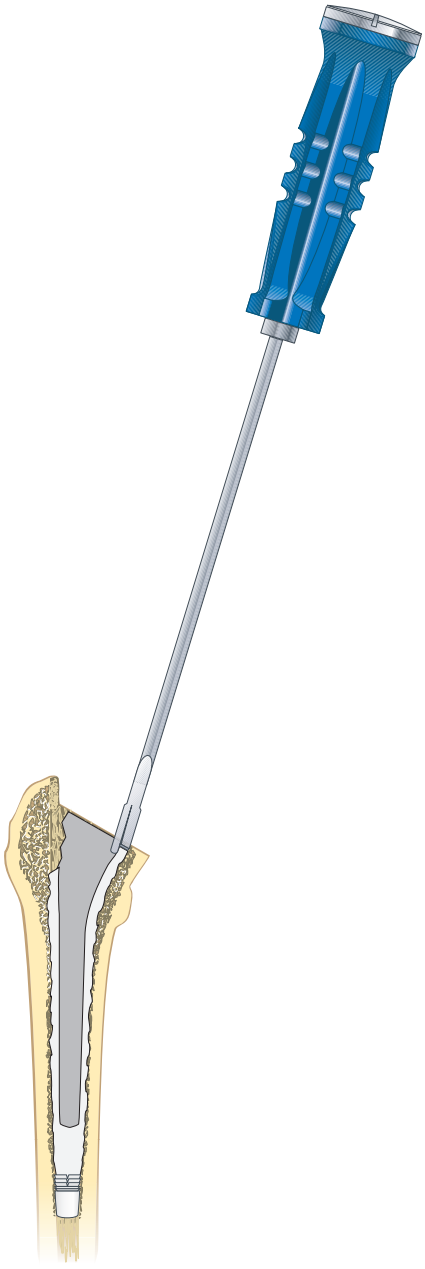
Hook Stem Extractor
If a proximal extraction hole is exposed, the Hook Stem Extractor (71367557) can be used with the Large Slap Hammer (71367553) to remove the prosthesis. The Hook Stem Extractor is designed to fit most prostheses with a proximal extraction hole. If the extractor does not readily remove the stem, further interface disruption must be accomplished or fracture of the surrounding femur may occur.

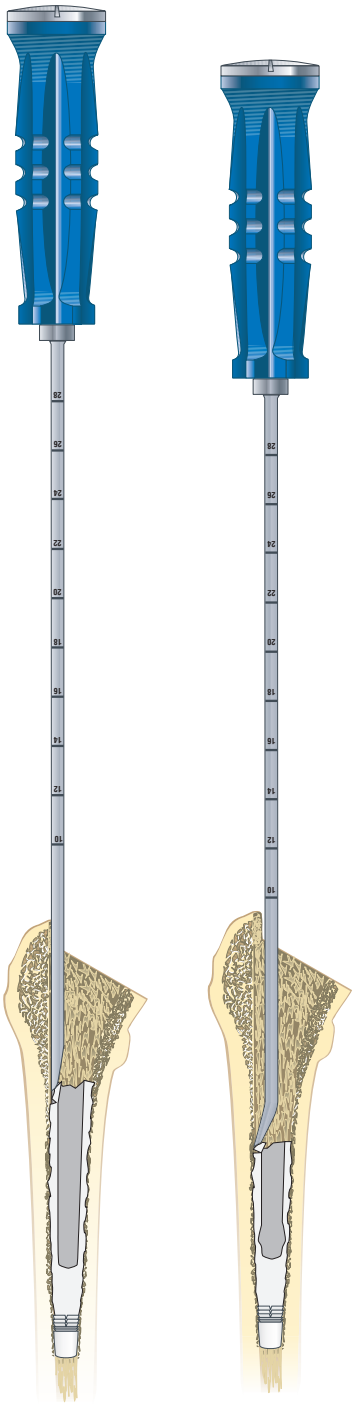


Fixed Head Stem Extractor
With a one-piece femoral prosthesis, the Fixed Head Stem Extractor (71367559) can be used with the Large Slap Hammer (71367553) to remove the prosthesis. The Fixed Head Stem Extractor is designed to fit over the femoral head of the prosthesis and engage the neck. If the extractor does not readily remove the stem, further cement removal must be accomplished or fracture of the surrounding femur may occur.

Flag Splitter

Straight Gouge



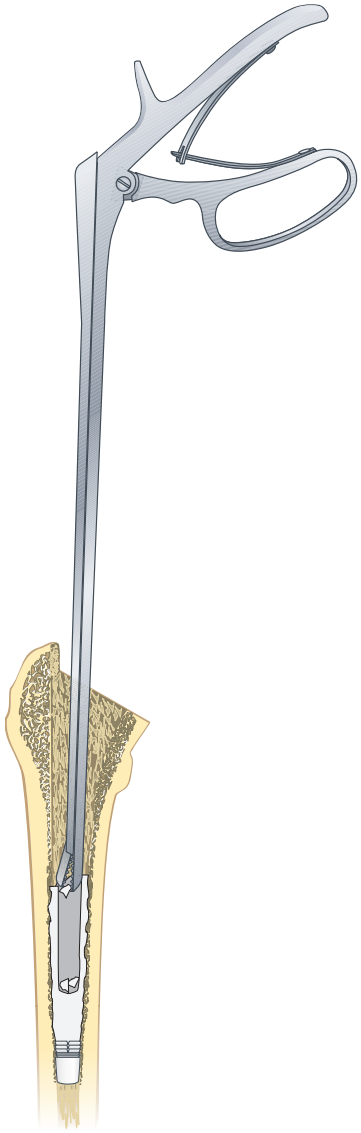


Flag Splitter

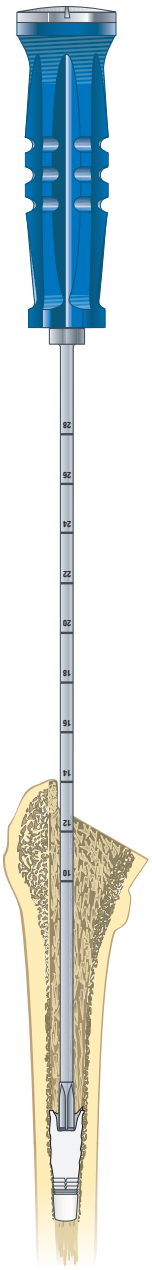
Once the cemented femoral component has been removed, the Flag Splitter (71367560) may be used to make longitudinal fractures in the proximal cement mantle. This instrument offers a slightly longer tip to guide the cutting edge along the cement mantle.

Straight and Angled Gouges

The Straight Gouge (71367564) and Angled Gouge (71367563) can be utilized to remove cement in the middle and distal third regions of the cement mantle. Preferably, these gouges are used after splitting an intact cement mantle with the Flag Splitter. Care should be taken to avoid penetrating the cortical surface of the bone.

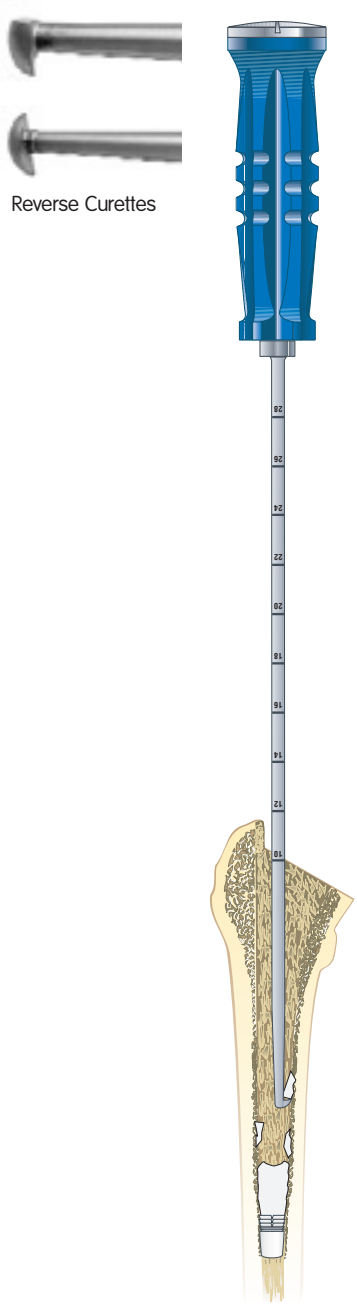


"X" Osteotome

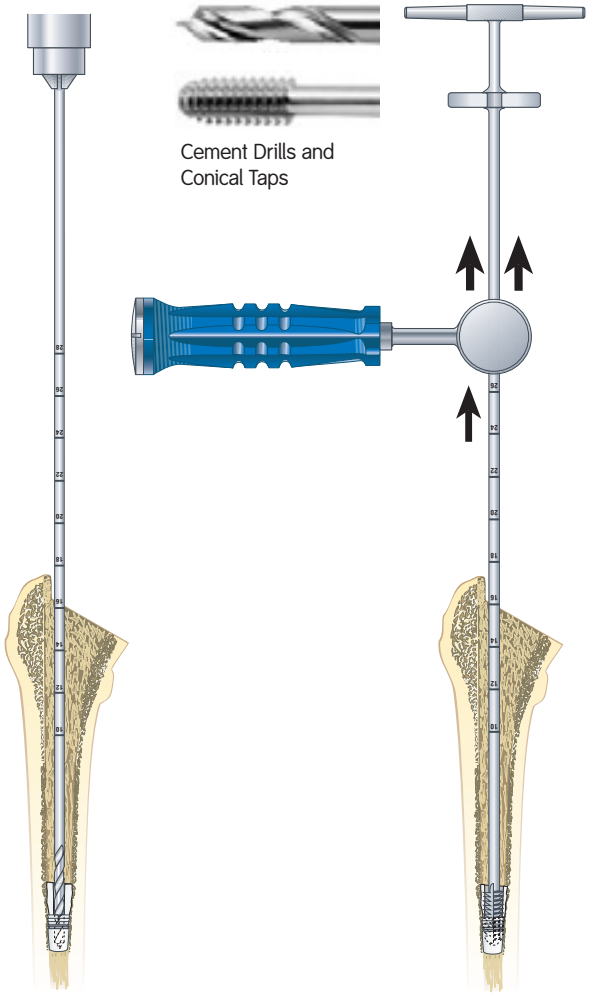


Rongeurs with Teeth
The Rongeurs with Teeth (71369200 and 71369300) may be used to grasp loose cement particles in the femoral canal. The two lengths, 200 mm and 300 mm, are designed to grasp loose cement in the proximal and distal portion of the femoral canal.

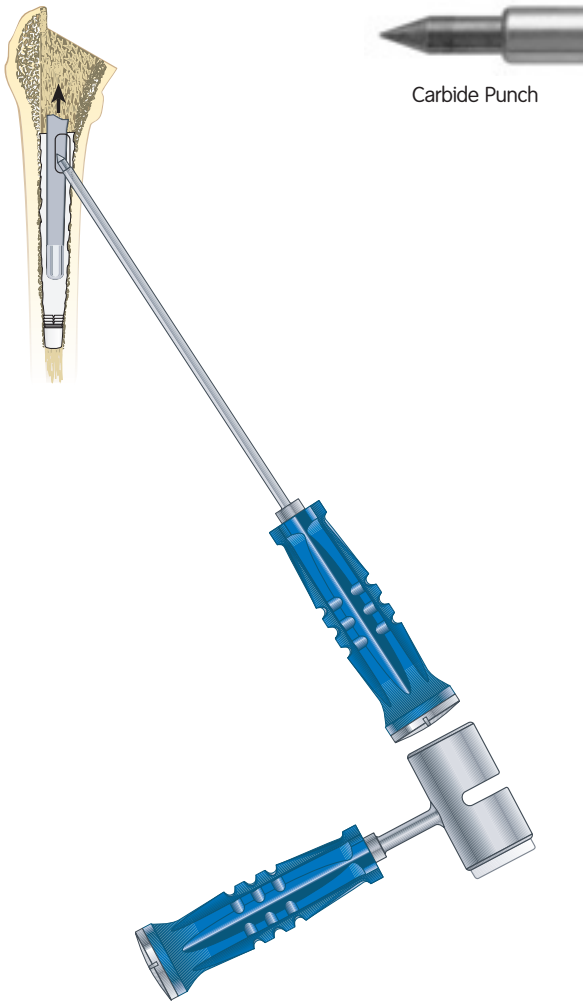
“X” Osteotome
The “X” Osteotome (71369207) is very effective in removal of cement distal to the tip of the implant. It is used to progressively fragment the hard cement in this region as it is impacted and rotated repetitively.



Reverse Curettes
The Reverse Curettes (71369517 and 71369519) come in two widths, 7 mm and 9 mm. They are primarily used to scrape along the inside of the canal to remove any remnants of the cement mantle or residual membrane after cement removal.

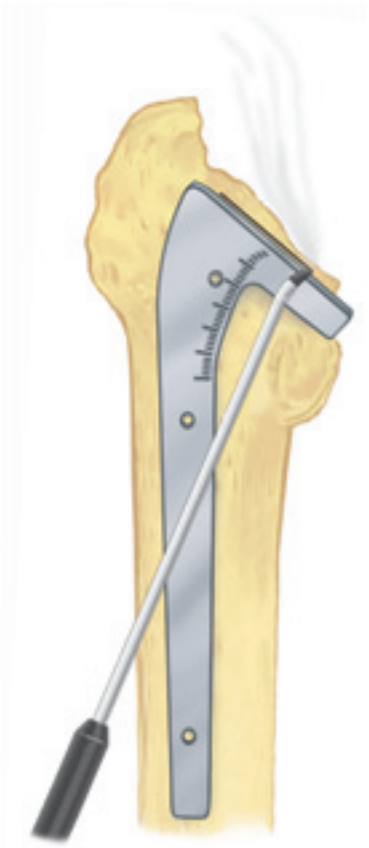


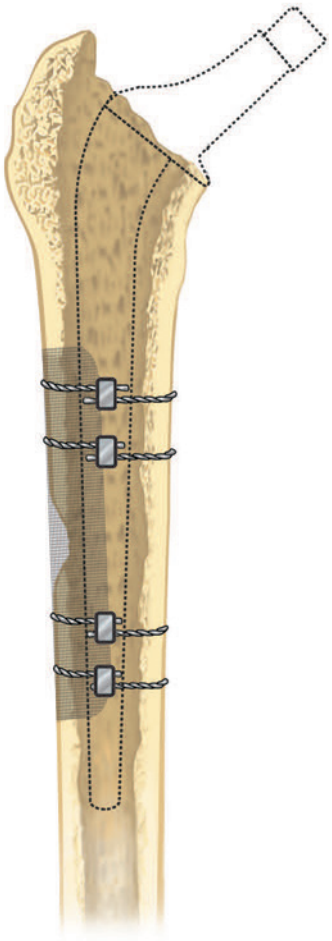
Cement Drills and Conical Taps
If the distal cement mantle is intact and loose, the Cement Drills (71349045, 71369006, and 71369008) and sharp-threaded Conical Taps (71369007 and 71369009) can be used to extract the distal cement mantle as a large fragment. The risk of cortical perforation should be assessed through A/P and lateral radiographs prior to introducing the Cement Drill. Care should be taken not to introduce the drill into an eccentrically placed channel. The Cement Drills are offered in three diameters, 4.5 mm, 6 mm, and 8 mm, and are used to create a pilot hole into the cement restrictor through which the Conical Taps are passed. The Conical Taps also come in two diameters, 7 mm and 9 mm, and are used in conjunction with the Slotted Mallet (71367552). After the appropriate size tap is chosen, several sharp turns embed it into the cement restrictor. The Slotted Mallet is then impacted against the collar to extract the distal cement.



Carbide Punch
In the case of a fractured femoral stem, the proximal portion is usually loose and easily removed. In contrast, the distal portion remains fixed in the remaining cement mantle. The Carbide Punch (71367566) is an effective tool for removing the distal portion of the fractured stem. A longitudinal slot is created just distal to the top of the broken prosthesis to allow access to the broken fragment directly. The Carbide Punch is then used to make divots in the surface of the prosthesis and drive the prosthesis proximally.

SPECTRON◇ Revision Technique





Prepare The Acetabulum
If acetabular reconstruction is required, prepare the acetabulum using the technique for the intended acetabular component.

Calcar Resection Level
In the O.R., place the osteotomy guide on the femur by referencing the top of the lesser trochanter at the same graduation mark as noted during templating. Make a reference mark on the calcar to facilitate calcar planing later in the procedure.

Pre-Existing Defects
When there is a pre-existing defect in the shaft, the area of the defect should be exposed. The revision stem to be implanted should pass beyond the defective area, otherwise the defect may undergo fatigue fracture. Usually, the length of the stem extending beyond the defect should be greater than two times the diameter of the femoral shaft at the area of the defect. In most cases, 4-6 cm beyond the distal most part of the defect is adequate. There is no need to use an extremely long stem. An extremely long stem may make proper cement fixation difficult.

Whenever major contained bone defects are apparent, consider using the RIG (Radial Impaction Grafting) technique.

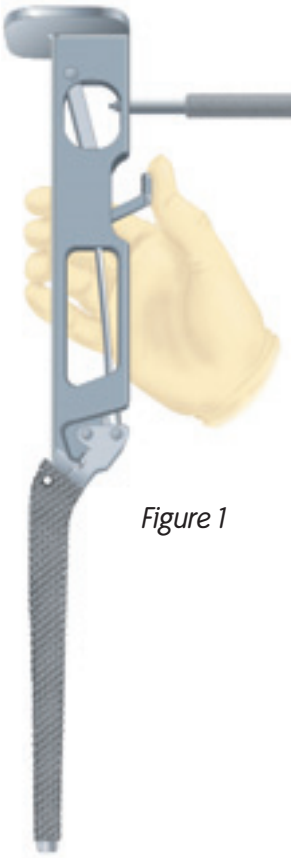


Figure 1

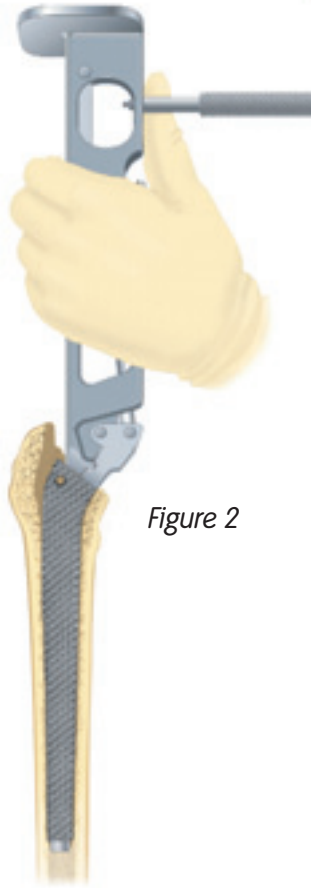


Figure 2

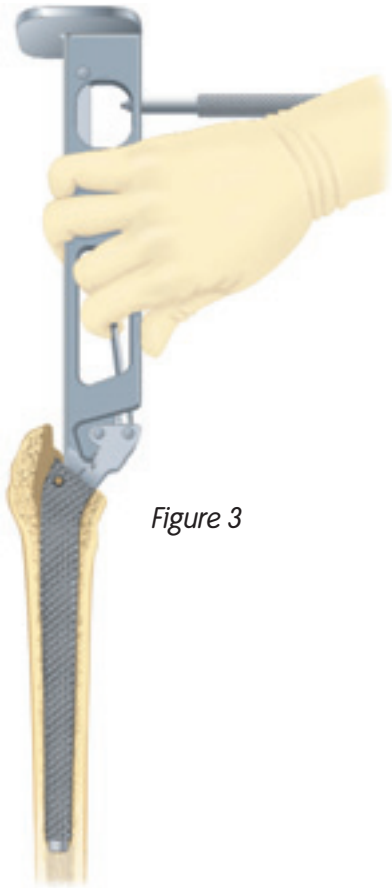


Figure 3

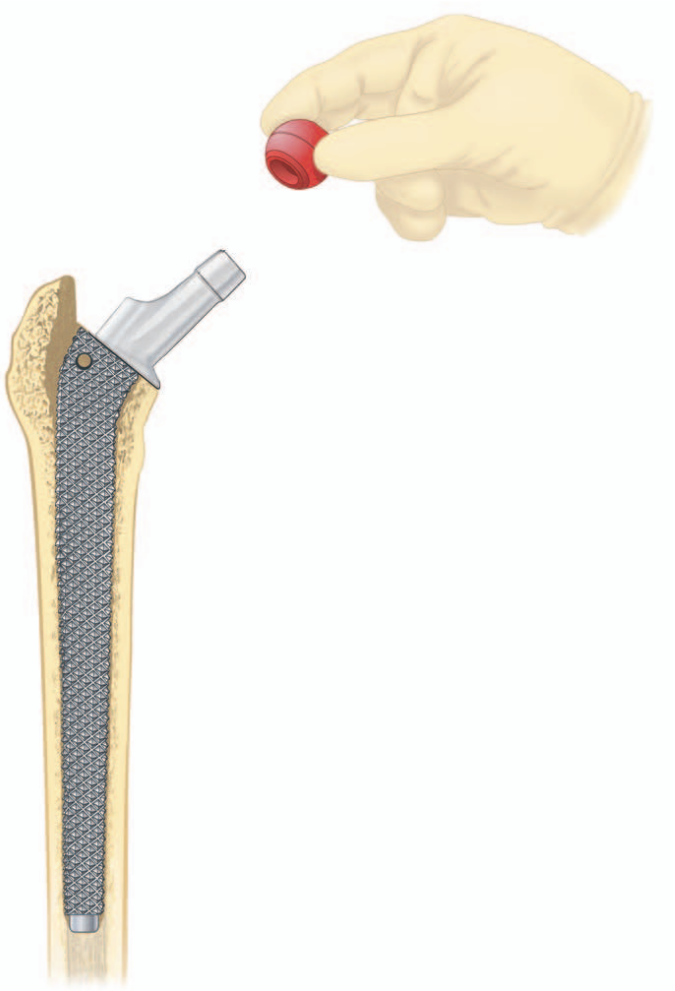
Femoral Canal Preparation
Assemble the broach to the broach handle by placing the broach post in the clamp. Use the thumb to lock the clamp onto the broach. A modular anteversion handle can be assembled to the broach handle to provide version control *(Figure 1)*.

Start the broaching procedure along the mid-axis of the femur with the size Small broach. Continue progressively broaching to the predetermined stem size and length. It is important to stay lateral and posterior with the femoral broaches to ensure proper alignment with the femoral axis. Seat the broach slightly below the mark on the calcar to facilitate calcar reaming *(Figure 2)*.

Disassemble the broach from the broach handle by placing two or three fingers into the rectangular slot. Apply pressure to the release bar by squeezing the fingers towards the thumb resting on the medial side of the broach handle *(Figure 3)*.

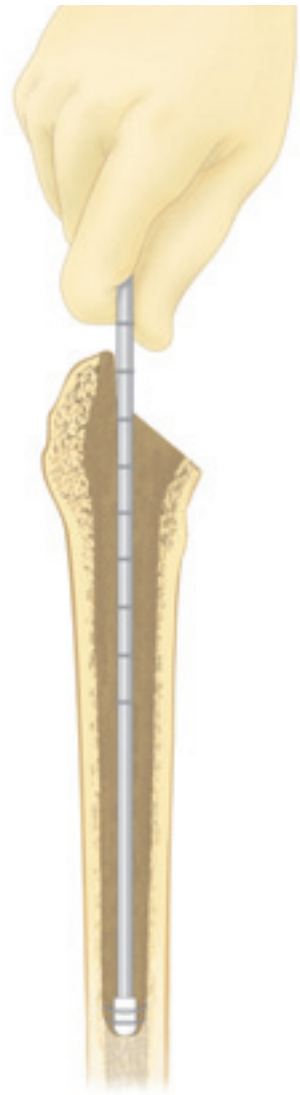
The SPECTRON® Revision broach is designed to provide a minimum 1.5 mm cement mantle per side. Additional cement mantle thickness can be achieved by pressurizing the cement into the remaining cancellous bone. The broach is slightly longer than the corresponding implant to accommodate the BUCK cement restrictor.

Calcar Preparation
With the final broach fully seated, remove the broach handle and ream the calcar. Plane the calcar until it is level with the broach.



Trialing
Remove the calcar reamer and place the matching Long Straight trial neck onto the broach post. Select the trial femoral head of desired diameter and neck length. Reduce the hip to assess stability and range of motion.

If trialing for the universal Bipolar or Unipolar, trial according to the appropriate technique for the selected device.



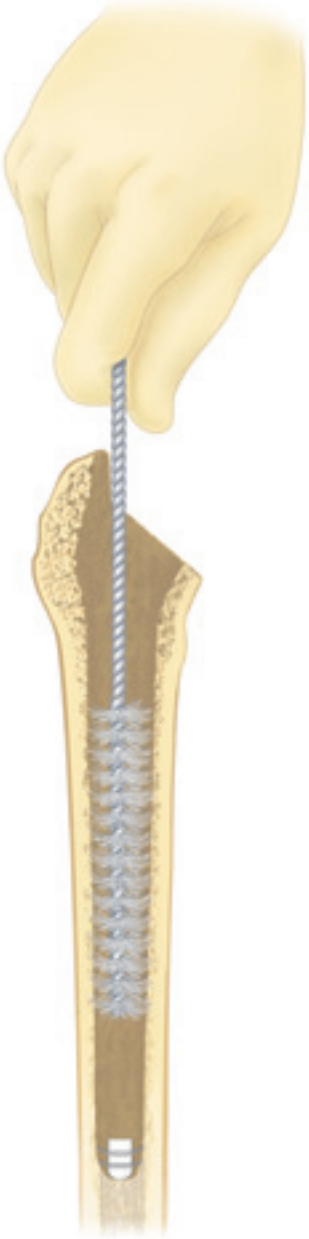
BUCK Cement Restrictor	
Stem Size	Insertion Depth (mm)
LS – 165 mm	185
LS – 195 mm	215
LS – 225 mm	245

Placing The BUCK Cement Restrictor
Attach the broach handle to the broach and remove the broach.

The proximal flange of the cement restrictor should always be larger than the distal canal diameter. Accurate cement restrictor depth placement is then determined by placing the Long Straight stem next to the inserter tool and adding 20 mm to the length *(See table)*.

Remove the vent-occluding membrane by inserting the vent opening tool into the distal end of the restrictor and pushing the pin through the vent hole. Remove and discard the plastic debris.

Thread the cement restrictor onto the inserter using a clockwise motion. Insert the device to the level of the medullary canal that has been predetermined. Once this level is reached, disengage the restrictor from the inserter using a counterclockwise twisting motion. Remove the inserter from the medullary canal. If it is necessary to remove the restrictor prior to cement insertion, it can be re-attached to the inserter rod and pulled out of the canal. The surgeon may adjust the restrictor as many times as required.

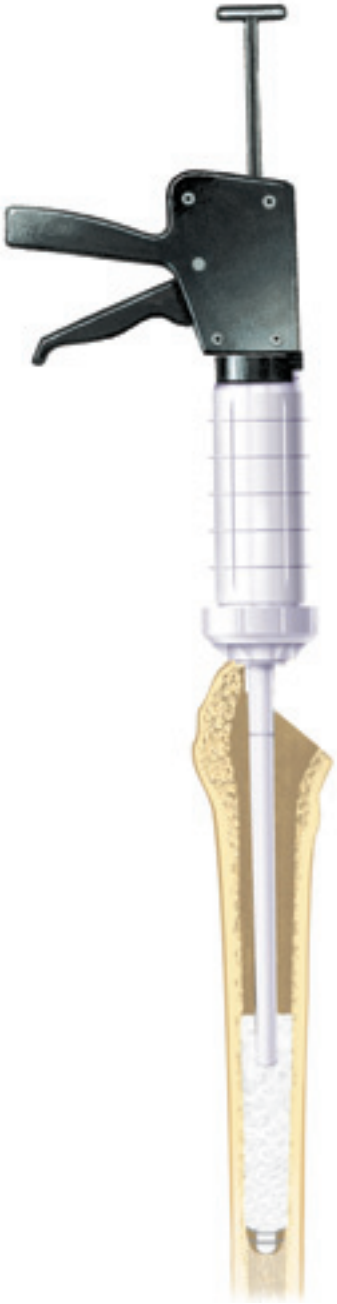


Preparing The Femoral Canal
Irrigate the canal with saline solution and pulsatile lavage to remove all debris. Continue preparing the femur with the femoral canal brush to remove any remaining weak cancellous bone, blood clots, and marrow fats. Repeat lavaging as necessary to remove all remaining debris.

Drying The Femoral Canal
Insert the femoral absorber into the femoral canal to dry the canal while mixing the cement.

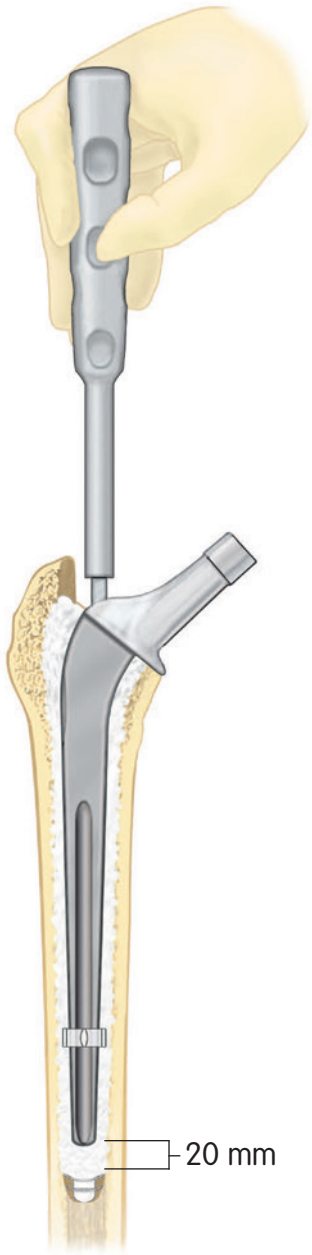
Loading Cement
The amount of cement used in a revision case is usually 80 grams. However, 120 grams may be needed depending on the width and the length of the femoral canal. The VORTEX® Vacuum Mixer allows for mixing of 120 grams of RALLY® bone cement in one mixer.

Mixing
Mix the cement according to the manufacturer's instructions. Refer to VORTEX Vacuum Mixer instruction sheet for complete mixing technique.



Injecting Cement
After removing the femoral canal suction absorber, use suction to remove any remaining blood from the canal. Insert the nozzle of the cement gun to the top of the BUCK cement restrictor and inject cement into the canal in retrograde fashion. Continue injecting cement until the canal is completely full and the distal tip of the nozzle is clear of the canal.

Pressurizing Cement
Break off the long nozzle and place the femoral pressurizer over the short nozzle. Apply the disposable femoral pressurizer into the mouth of the canal. This will occlude the canal and compress the cement. Maintain firm pressure until the cement is in a doughy state and can withstand displacement and will allow for proper cement interdigitation into trabecular bone. Withdraw the femoral pressurizer and remove any extruded cement around the periphery of the canal.



Stem Size	Centralizer Size (mm)	O.D. (mm)
Small	Small	12
Medium	Medium	14
Large	Large	16

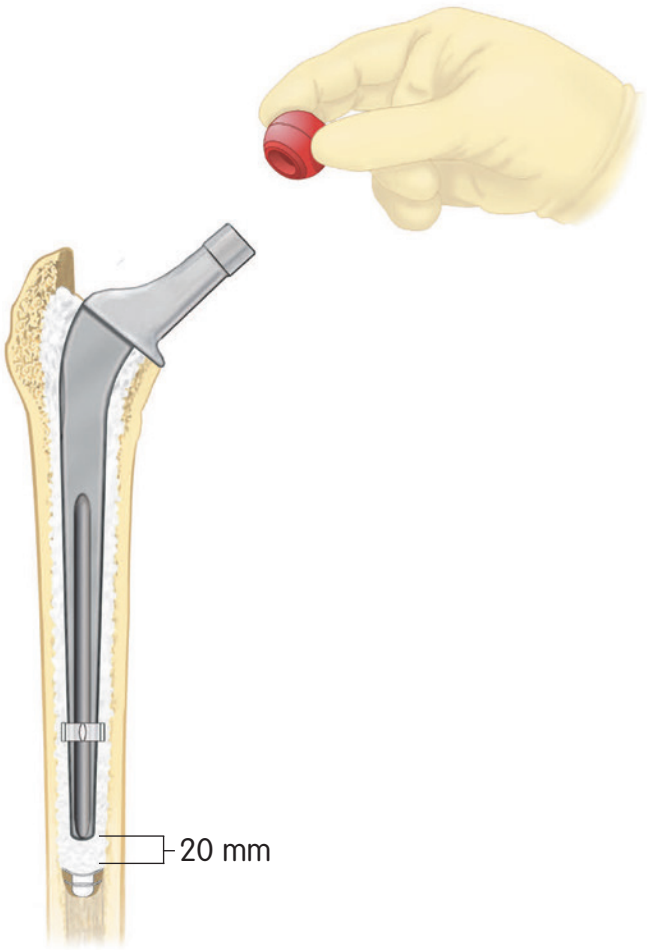
Distal Centralizer Selection

Use the implant, which corresponds to the last broach seated in the femur. An optional distal centralizer may be placed on the stem to assist in providing neutral alignment and predictable cement mantle. Each implant has a corresponding centralizer, which is intended to provide a uniform 1.5 mm distal cement mantle *(See table)*. Using clean gloves, place the distal centralizer over the distal tip and carefully push superiorly until snug. The centralizer will be positioned approximately 125 mm distal to the collar on all stem sizes and lengths.

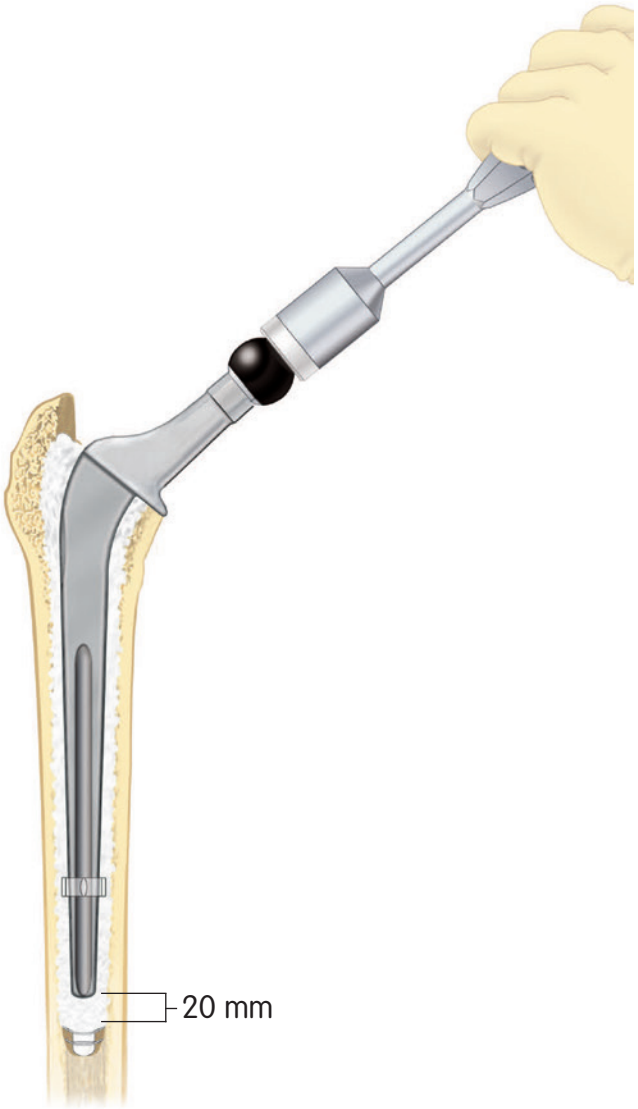
Stem Insertion

Insert the selected femoral stem into the canal. Fit the femoral stem driver into the stem driving platform and push into place. Advance the stem approximately 1 cm per second to avoid air inclusions in the stem/cement interface.

Trim away excess cement with Concise cement sculps. Remove the stem driver and maintain steady pressure with the thumb on the neck taper until the cement is cured.



Final Trial Reduction
Once the implant is fully seated and the cement has cured, a final trial reduction may be performed using trial femoral heads.



Femoral Head Assembly
Clean and dry the neck taper with a clean sterile cloth. Place the prosthetic femoral head on the neck taper and firmly impact several times with a head impactor and mallet.

SPECTRON® 12/14 Revision Femoral Stem & Head Components

Spec Rev 12/14 Tpr L/S Implant Set	
Set Number	71312000

Long Straight Implants 12/14 Taper
Cobalt Chromium

Size	Length	Cat. No.
Small	165 mm	71312231
Medium	165 mm	71312232
Large	165 mm	71312233
Small	195 mm	71312234
Medium	195 mm	71312235
Large	195 mm	71312236
Small	225 mm	71312237
Medium	225 mm	71312238
Large	225 mm	71312239

OXINIUM® Femoral Heads 12/14 Taper

Neck Length	22mm	26mm	28mm	32mm	36mm	40mm	44mm
–4	—	—	—	—	—	71342340 & sleeve 71344245	71342344 & sleeve 71344245
–3	—	—	71342803	71343203	71343603	—	—
+0	71342200	71342600	71342800	71343200	71343600	71342340 & sleeve 71344247	71342344 & sleeve: 71344247
+4	71342204	71342604	71342804	71343204	71343604	71342340 & sleeve 71344248	71342344 & sleeve 71344248
+8	71342208	71342608	71342808	71343208	71343608	71342340 & sleeve 71344249	71342344 & sleeve 71344249
+12	71342212	71342612	71342812	71343212	71343612	—	—
+16	—	—	71342816	71343216	—	—	—

CoCr Femoral Heads 12/14 Taper

Cobalt Chromium

Neck Length	22mm	26mm	28mm	32mm	36mm	40mm	44mm
–4	—	—	—	—		71342640 & sleeve 71344245	71342644 & sleeve 71344245
–3	—	—	71302803	71303203	71303603	—	—
+0	71302200	71302600	71302800	71303200	71303600	71342640 & sleeve 71344247	71342644 & sleeve: 71344247
+4	71302204	71302604	71302804	71303204	71303604	71342640 & sleeve 71344248	71342644 & sleeve 71344248
+8	71302208	71302608	71302808	71303208	71303608	71342640 & sleeve 71344249	71342644 & sleeve 71344249
+12	71302212	71302612	71302812	71303212	71303612	—	—
+16	—	—	71302816	71303216	—	—	—

TANDEM® Unipolar Femoral Heads 12/14 Taper

Cobalt Chromium

Neck Length	Sleeve	40-55mm	57mm	59mm	61mm
–3	71326603	126640-55	126657	126659	126661
+0	71326600	126640-55	126657	126659	126661
+4	71326604	126640-55	126657	126659	126661
+8	71326608	126640-55	126657	126659	126661
+12	71326612	126640-55	126657	126659	126661

SPECTRON® Stems are compatible with all sizes of TANDEM Unipolar Heads.

The TANDEM Unipolar Heads must be used with the TANDEM Unipolar Taper Sleeves. The Unipolar Heads do not fit on a standard 12/14 Taper Stem by themselves. The 12/14 TANDEM Unipolar Taper Sleeves allow the TANDEM Unipolar Heads to fit on the SPECTRON 12/14 Taper Stem. The inner Taper of the TANDEM Unipolar Taper Sleeves matches the SPECTRON Stem Taper.

BIOLOX® Delta Heads 12/14/ Taper

Neck Length	32mm	36mm	40mm
–3	—	—	—
+0	76539160	76539165	71346004
+4	76539161	76539166	71346005
+8	76539162	76539167	71346006
+12	—	76539153	—
+16	—	—	—

Trial 12/14 Taper Femoral Heads

Neck Length	Color Code	22 mm	26 mm	28 mm	32 mm
–3	Green	—	—	71352803	71353203
+0	Yellow	71352200	71352600	71352800	71353200
+4	Red	71352204	71352604	71352804	71353204
+8	White	71352208	71352608	71352808	71353208
+12	Blue		71352612	71352812	71353212
+16	Black	—	—	71352816	71353216

Titanium Modular Head Sleeve 12/14 Taper Neck Length

Neck Length	Cat. no.
-4	71344245
+0	71344247
+4	71344248
+8	71344249

*Use with 40mm and 44mm OXINIUM® and CoCr Modular Femoral Heads

SPECTRON◊ 12/14 Revision Instrumentation

NOTE: The SPECTRON EF Primary Instrument Set (71353250) needs to be brought into the O.R. to access the following instruments: Broach Handle (71364007); 12/14 Trial Heads; Stem Driver (11-9817); and the Femoral Head Impactor (71364009).

SPECTRON Primary Tray Set	
Set Number	71353250

Cat. No,	Description
119657	Blunt Medullary Reamer
119817	SPECTRON EF Femoral Driver
71364000	Osteotomy Guide
71364002	Box Osteotome Small
71364007	Broach Handle
71364009	Femoral Head Impactor
71364012	Anteversion Handle
71365001	SPECTRON EF Size 1 Broach
71365002	SPECTRON EF Size 2 Broach
71365003	SPECTRON EF Size 3 Broach
71365004	SPECTRON EF Size 4 Broach
71365005	SPECTRON EF Size 5 Broach
71365023	SPECTRON Sz 1-3 Calcar Reamer
71365025	SPECTRON Sz 4-5 Calcar Reamer
71365081	SPECTRON 12/14 TRL NK SO Sz 1
71365082	SPECTRON 12/14 TRL NK SO Sz 2
71365083	SPECTRON 12/14 TRL NK SO Sz 3
71365084	SPECTRON 12/14 TRL NK SO Sz 4
71365085	SPECTRON 12/14 TRL NK SO Sz 5
71365091	SPECTRON 12/14 TRL NK HO Sz 1
71365092	SPECTRON 12/14 TRL NK HO Sz 2
71365093	SPECTRON 12/14 TRL NK HO Sz 3
71365094	SPECTRON 12/14 TRL NK HO Sz 4
71365095	SPECTRON 12/14 TRL NK HO Sz 5
75100843	Trial Femoral Head 28 Xs/-3
75100844	Trial Femoral Head 28 S/+0
75100845	Trial Femoral Head 28 M/+4
75100846	Trial Femoral Head 28 L/+8
75100847	Trial Femoral Head 28xl/+12
75100848	Trial Femoral Head 28 Xxl/+16
75100849	Trial Femoral Head 32 Xs/-3
75100850	Trial Femoral Head 32 S/+0
75100851	Trial Femoral Head 32 M/+4
75100852	Trial Femoral Head 32 L/+8
75100853	Trial Femoral Head 32 Xl/+12
75100854	Trial Femoral Head 32xxl/+16
75100855	Trial Femoral Head 36 Xs/-3
75100856	Trial Femoral Head 36 S/+0
75100857	Trial Femoral Head 36 M/+4
75100858	Trial Femoral Head 36 L/+8
75100859	Trial Femoral Head 36 Xl/+12
71353355	Generic Full Tray Lid
71365169	SPECTRON EF Primary Instrument Tray

SPECTRON◊ 12/14 Revision Instrumentation

SPECTRON Revision Broaches/Trials

Set Number	71353260

Long Straight Broaches/Trials

Size	Length	Cat. No.
Small	165 mm	71365129
Medium	165 mm	71365132
Large	165 mm	71365135
Small	195 mm	71365130
Medium	195 mm	71365133
Large	195 mm	71365136
Small	225 mm	71365131
Medium	225 mm	71365134
Large	225 mm	71365137

SPECTRON Revision 12/14 Taper Dist Cent Set

Set Number	71313300

SPECTRON® Revision Centralizer

Size	O.D.	Cat. No.
Small	12 mm	71313312
Medium	14 mm	71313314
Large	16 mm	71313316

Long Straight Trial Necks 12/14 Taper

Size	Cat. No.
Small	71365098
Medium/Large	71365099

Osteotomy Guide

Cat. No.
71364000

Revision Implant Removal System Instrumentation

71367500 RENOVATION® Implant Removal Kit *Includes the Acetabular and Femoral Implant Removal Trays and Instruments. Disposable Osteotome Blades are not included.*

71367540	**Acetabular Implant Removal Tray** **Tray Accepts the Following:**
71367573	Acetabular Implant Removal Tray Insert
71367547	Osteotome System Tray Insert
71367541	Small Slap Hammer
71367542	Acetabular Component Gripper
71367543	Acetabular Component Forceps
71367544	Curved Acetabular Chisel
71367545	Round Acetabular Cement Splitter
71367548	Quick-Coupling Osteotome Handle, Short
71367549	Quick-Coupling Osteotome Handle, Long
71367546	Acetabular Gouge, Size 46
71367550	Acetabular Gouge, Size 50
71367554	Acetabular Gouge, Size 54
71367558	Acetabular Gouge, Size 58
71367562	Acetabular Gouge, Size 62
71367567	Small Acetabular Gouge

Disposable Osteotome Blades (Sterile)	
71369310	Radial Osteotome Blade, Size 10
71369312	Radial Osteotome Blade, Size 12
71369314	Radial Osteotome Blade, Size 14
71369316	Radial Osteotome Blade, Size 16
71369208	Thin Osteotome Blade, 8 mm x 3"
71369210	Thin Osteotome Blade, 10 mm x 3"
71369212	Thin Osteotome Blade, 12 mm x 3"
71369220	Thin Osteotome Blade, 20 mm x 3"
71369412	Thin Osteotome Blade, Rounded End, 12 mm
71369420	Thin Osteotome Blade, Rounded End, 20 mm
71369410	Thin Osteotome Blade, 10 mm x 5"
71369408	Thin Osteotome Blade, 8 mm x 5"

71367551	**Femoral Implant Removal Tray** **Tray Accepts the Following:**
71367571	Femoral Implant Removal Tray Insert #1
71367572	Femoral Implant Removal Tray Insert #2
71367552	Slotted Mallet
71367553	Large Slap Hammer
71367555	Modular Stem Extractor
71367556	T-Handle Wrench
71367557	Hook Stem Extractor
71367559	Fixed Head Stem Extractor
71369007	Conical Tap, 7 mm
71369009	Conical Tap, 9 mm
71369045	Cement Drill, 4.5 mm
71369006	Cement Drill, 6 mm
71369008	Cement Drill, 8 mm
71367560	Flag Splitter
71367561	“V” Splitter
71369308	Chisel, 8 mm x 17"
71367563	Angled Gouge
71367564	Straight Gouge
71367566	Carbide Punch
71369517	Reverse Curette, 7 mm x 17"
71369519	Reverse Curette, 9 mm x 17"
71369207	“X” Osteotome, 7 mm x 17"
71369200	Rongeur 200 mm with Teeth
71369300	Rongeur 300 mm with Teeth

SPECTRON® Revision Stem

Femoral Heads	Modular Femoral Heads and Sleeve	Unipolar Heads and Sleeve
OXINIUM®	Titanium Modular Head Sleeves 12/14 Taper	Unipolar Taper Sleeves -12/14 Taper
Cobalt Chrome		Unipolar Taper Sleeves -14/16 Taper
BIOLOX® Delta Ceramic	OXINIUM Modular Femoral Heads	TANDEM® Unipolar Heads
	Cobalt Chrome Modular Femoral Heads	

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Smith & Nephew, Inc.
1450 Brooks Road
Memphis, TN 38116
USA

Phone: (901) 396-2121
Information: 1-800-821-5700
Orders and Inquiries: 1-800-238-7538

www.smith-nephew.com

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