



# SuperPATH<sup>®</sup>

Micro-Posterior<sup>®</sup> Approach

SURGICAL TECHNIQUE



# Table of Contents

<b>Chapter 1</b>	<b>Introduction</b>
<b>Chapter 2</b>	<b>Indications and Warnings</b>
<b>Chapter 3</b>	<b>Surgical Technique</b>
7	Patient Positioning
8	Soft-Tissue Dissection
8	Capsular Exposure
9	Capsular Incision
10	Femoral Preparation
10	Femoral Broaching
11	Femoral Head Resection
11	Femoral Head Removal
12	Acetabular Preparation
12	Percutaneous Incision
13	Acetabular Reaming
14	Cup Placement
14	Screw Placement
15	Trial Reduction
16	Trial Disassembly
16	Implant Assembly
17	Closure
<b>Chapter 4</b>	<b>Ordering Information</b>

Proper surgical procedures and techniques are the responsibility of the medical professional. The following guidelines are furnished for information purposes only. Each surgeon must evaluate the appropriateness of the procedures based on his or her personal medical training and experience. Prior to use of the system, the surgeon should refer to the product package insert for complete warnings, precautions, indications, contraindications and adverse effects.

Package inserts can be found under:  
Prescribing Information on [ortho.microport.com](http://ortho.microport.com)

# Chapter 1

## Introduction

### Introduction to the SuperPATH® Micro-Posterior® Approach

The posterior approach is considered the gold standard of THA, allowing access to the hip joint for the placement of components without any femoral head size limitation. Specifically, the posterior approach allows for the use of big femoral head prostheses and ream-and-broach or broach-only femoral stems.

The Supercapsular Percutaneously Assisted Total Hip (SuperPATH®) approach is a modification of the standard posterior approach, with the added benefit of allowing for the short external rotators to remain intact. Preservation of these muscles can decrease operative time, post-operative recovery and intra-operative blood loss, and increase post-operative stability while requiring fewer post-operative movement restrictions. The SuperPATH® approach maintains all of the advantages of the standard posterior approach and is also extensible, being easily converted to the standard posterior approach, making it easy to learn and providing the surgeon complete freedom during the operation.

The necessary size of a THA incision decreases as the angular constraints of the femoral component and acetabular reamers are addressed. Modularity in the design of the femoral component allows access to the femur in a manner similar to an intermedullary (IM) rod - that being directly superior. With the advent of

SuperPATH®, acetabular preparation can be performed through a percutaneous incision.

Accessing the femur through the trochanteric fossa with the femoral head intact absorbs some hoop stresses during reaming and allows for less chance of fracture associated with the insertion of noncemented femoral components. To prevent varus orientation of these components, a lateralizing trochanteric reamer is recommended.

Additionally, offset is easily determined after broaching the femur with the head *in situ*. When the appropriate size broach is seated, the neck osteotomy permits precise resection of the neck – representing the exact offset without major acetabular deformity.

Acetabular preparation is performed through a small portal incision, allowing medialization with the reamers. Direct visualization allows precise placement of the acetabular component. Working through a cannula, the leg can be moved to easily access all boundaries of the acetabulum, regardless of patient anatomy. In addition, acetabular preparation will not be obstructed by the greater trochanter or the proximal femur. And using the Alignment Handle and the Blunt Trocar, the risk of damaging the sciatic nerve is minimized, with a safe zone posterior to the femur of at least 2.5cm.

# Chapter 2

## Indications and Warnings

### Indications and Warnings

#### General Risks

Please consult IFU for complete risk information, this can be found under Prescribing Information on ortho.microport.com, and then selecting any brand of MicroPort hip implants. Please consult the IFU for information on cleaning and handling of MicroPort instruments, this can be found under Prescribing Information on wmt.com, and then selecting “Cleaning and Handling of MicroPort Instruments.”

#### Indications

##### Intended Use

MicroPort total hip systems are intended for use in total hip arthroplasty for reduction or relief of pain and/or improved hip function in skeletally mature patients.

##### Indications for Use

1. non-inflammatory degenerative joint disease such as osteoarthritis, avascular necrosis, ankylosis, protrusio acetabuli, and painful hip dysplasia;
2. inflammatory degenerative joint disease such as rheumatoid arthritis;
3. correction of functional deformity; and,
4. revision procedures where other treatments or devices have failed

*Please consult the IFU for complete information regarding a specific MicroPort implant.*

#### Contraindications

Patients should be warned of these contraindications.

Contraindications include:

1. overt infection;
2. distant foci of infections (which may cause hematogenous spread to the implant site);
3. rapid disease progression as manifested by joint destruction or bone absorption apparent on roentgenogram;
4. skeletally immature patients (patient is less than 21 years of age at the time of surgery);
5. cases where there is inadequate neuromuscular status (e.g., prior paralysis, fusion and/or inadequate abductor strength), poor bone stock, poor skin coverage around the joint which would make the procedure unjustifiable;
6. neuropathic joints;
7. hepatitis or HIV infection;
8. neurological or musculoskeletal disease that may adversely affect gait or weightbearing.

Additional contraindications for a metal-on-metal bearing include:

1. Patients with known moderate to severe renal insufficiency;
2. Females of childbearing age are contraindicated due to the unknown effects of elevated levels of metal ions on the fetus.

*Please consult the IFU for complete information regarding a specific MicroPort implant.*

### Preoperative Precautions

The surgeon must evaluate each situation individually based on the patient's clinical presentation in making any decisions regarding implant selection. The surgeon must be thoroughly familiar with the implant, instruments and surgical procedure prior to performing surgery. The surgeon should contact MicroPort for product-specific surgical techniques.

Patient selection should consider the following factors which could lead to increased risk of failure and can be critical to the eventual success of the procedure: the patient's weight, activity level, and occupation. The patient should not have unrealistic functional expectations for occupations or activities that include substantial walking, running, lifting, or muscle strain. Additional conditions presenting increased risk of failure include:

1. uncooperative patient or patient with neurologic disorders, incapable of following instructions;
2. marked bone loss, severe osteoporosis, or revision procedures for which an adequate fit of the prosthesis cannot be achieved;
3. metabolic disorders that may impair bone formation;
4. osteomalacia;
5. poor prognosis for good wound healing (e.g., decubitus ulcer, end-stage diabetes, severe protein deficiency and/or malnutrition);
6. pre-existing conditions commonly considered with any surgery including bleeding disorders, long-term steroidal therapy, immunosuppressive therapy, or high dosage radiation therapy.

The patient should be warned of surgical risks, and made aware of possible adverse effects. The patient should be warned that the prosthesis does not replace normal healthy bone, that the prosthesis can break or become damaged as a result of certain activity or trauma, has a finite expected service life, and may need to be replaced at some time in the future. The patient should also be advised of other risks that the surgeon believes should be disclosed. The patient should be advised that any noise or unusual sensation should be reported to the surgeon as it may indicate implant malfunction.

*Please consult the IFU for complete information regarding a specific MicroPort implant.*

### Intraoperative Precautions

Specialized instruments are available and must be used to assure the accurate implantation of prosthetic components. Do not mix instruments from different manufacturers. While rare, breakage of instruments may occur especially with extensive use or excessive force. For this reason, instruments should be examined for wear or damage prior to surgery.

X-ray templates are used to estimate the size of the product to be used. The anatomy of the patient ultimately determines the size of the product for an individual patient.

*Please consult the IFU for complete information regarding a specific MicroPort implant.*

### Postoperative Precautions

The patient must be advised of the limitations of the reconstruction and the need for protection of the prosthesis from full weight bearing until adequate fixation and healing have occurred. The patient should be cautioned to limit activities and protect the replaced joint from unreasonable stresses and possible loosening, fracture and/or wear, and follow the instructions of the physician with respect to follow-up care and treatment. Loosening of the components can result in increased production of wear particles, as well as damage to the bone, making successful revision surgery more difficult. Periodic, long-term follow-up is recommended to monitor the position and state of the prosthetic components, as well as the condition of the adjoining bone. Periodic post-operative x-rays are recommended for close comparison with early post-op conditions to detect long term evidence of changes in position, loosening, bending, or cracking of components.

*Please consult the IFU for complete information regarding a specific MicroPort implant.*

Adverse Effects for total hip arthroplasty can include:

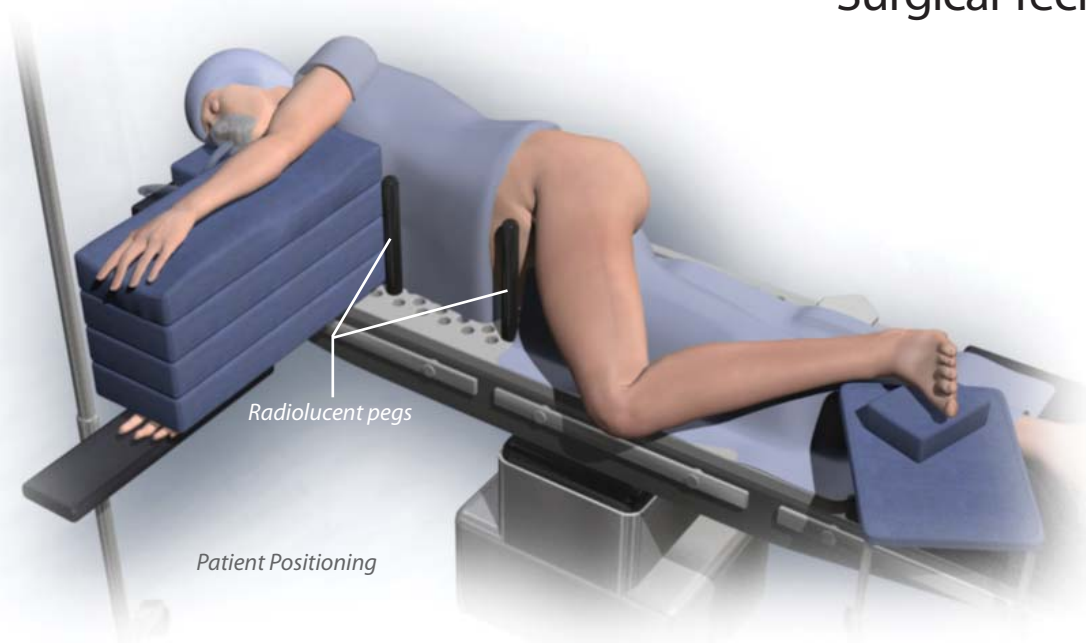
1. Osteolysis (progressive bone resorption).  
Osteolysis can be asymptomatic and therefore routine periodic radiographic examination is vital to prevent any serious future complication.
2. Particulates leading to increased wear rates necessitating early revision.

3. Allergic reactions to materials; metal sensitivity that may lead to histological reactions, pseudotumor and aseptic lymphocytic vasculitis-associated lesions (ALVAL).
4. Delayed wound healing; Deep wound infection (early or late) which may necessitate removal of the prosthesis. On rare occasions, arthrodesis of the involved joint or amputation of the limb may be required.
5. A sudden drop in blood pressure intra-operatively due to the use of bone cement;
6. Damage to blood vessels or hematoma;
7. Temporary or permanent nerve damage, peripheral neuropathies and subclinical nerve damage as possible result of surgical trauma resulting in pain or numbness of the affected limb;
8. Cardiovascular disorders including venous thrombosis, pulmonary embolism, or myocardial infarction;
9. Fatigue fracture of the prosthetic component can occur as a result of trauma, strenuous activity, improper alignment, incomplete implant seating, duration of service, loss of fixation, non-union, or excessive weight;
10. Dislocation, migration and/or subluxation of prosthetic components from improper positioning, trauma, loss of fixation and/or muscle and fibrous tissue laxity;
11. Periarticular calcification or ossification, with or without impediment to joint mobility;
12. Trochanteric non-union due to inadequate reattachment and or early weight bearing;
13. Trochanteric avulsion as a result of excess muscular tension, early weight bearing, or inadvertent intraoperative weakening;
14. Traumatic arthrosis of the knee from intraoperative positioning of the extremity;
15. Inadequate range of motion due to improper selection or positioning of components, by femoral impingement, and periarticular calcification;
16. Femoral or acetabular perforation or fracture; femoral fracture while seating the device; femoral fracture by trauma or excessive loading, particularly in the presence of poor bone stock;
17. Undesirable shortening or lengthening of the limb;
18. Aggravated problems of the affected limb or contralateral extremity by leg length discrepancy, excess femoral medialization, or muscle deficiency;
19. Pain.

*Please consult the IFU for complete information regarding a specific MicroPort implant.*

# Chapter 3

## Surgical Technique



### Surgical Technique

Accurate preoperative templating requires good quality standardized radiographs of the pelvis and operative hip.

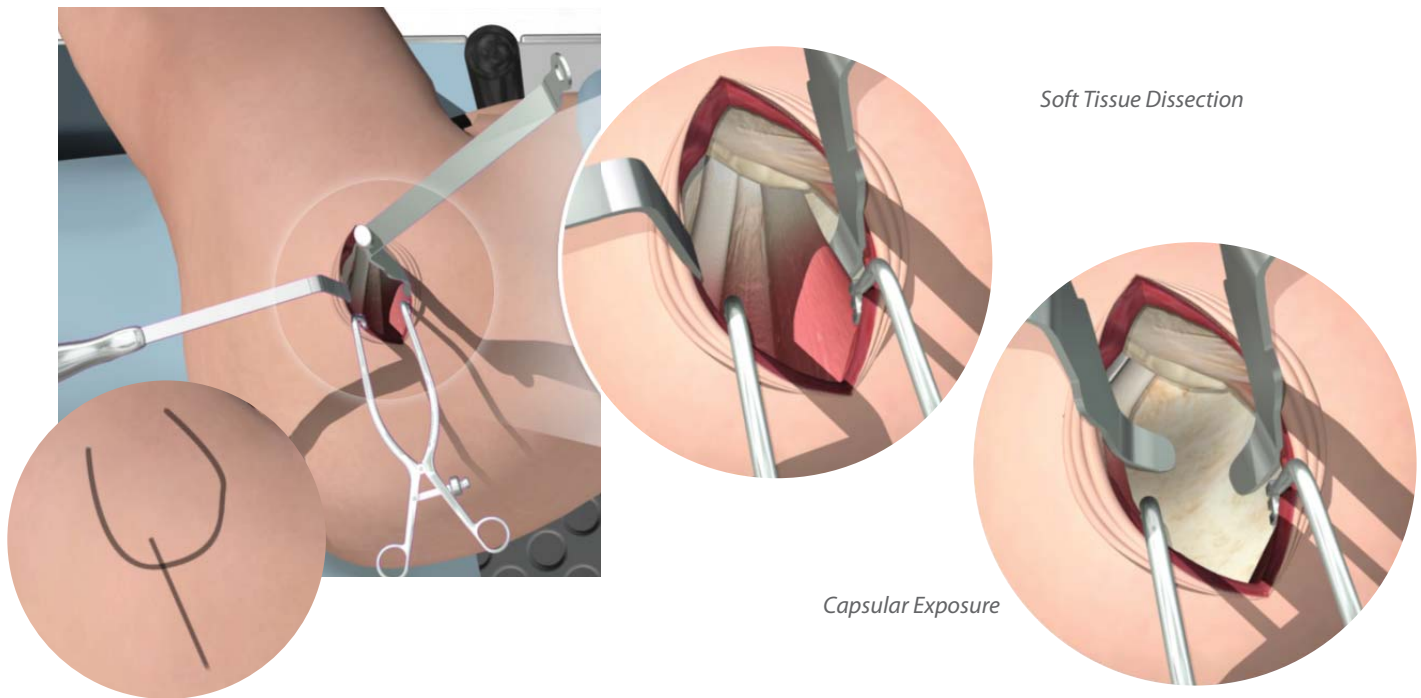
*CAUTION: Preoperative templating is intended for estimation purposes only. Final component size and position should be determined intraoperatively.*

#### Patient Positioning

The patient is placed in the standard lateral decubitus position in a location comfortable for the operating surgeon. Due to the nature of this technique, it is not necessary to bias the location of the patient to the anterior edge of the operating table as maximal leg adduction is not necessary. It is best to use a peg board for patient positioning, with radiolucent pegs in the following locations:

1. Pubic symphysis – two (2) long pegs
2. Sacrum – two (2) long pegs
3. Chest level, just below breasts – long peg
4. Shoulder blades – long peg

To ensure appropriate pelvic rotation, bias the hip to lean slightly posterior. Flex the operative hip 45° and internally rotate the operative leg 10° - 15° to present the greater trochanter upward. With the operative foot resting on a padded mayo stand and the leg in slight adduction, the weight of the leg will balance the hip, bringing the pelvis to neutral rotation. This is the “home position” of the technique as the operative leg will remain there for most of the procedure.



**Soft Tissue Dissection**

The incision is initiated at the tip of the greater trochanter and extended 6 - 8cm proximal, in line with the femoral axis. The incision is made to the level of the gluteus maximus investing fascia. The fascia is then incised using electrocautery, starting at the tip of the greater trochanter and extending in line with the main incision.

The operative leg can be flexed, extended or adducted to adjust visualization through the main incision. Two Wing-Tipped Elevators (P/N 20070038; angled versions may also be used, P/N 20070040) are used to split the gluteus maximus, exposing the bursa overlaying the gluteus medius. A very thin layer of bursa tissue is carefully incised along the posterior border of the gluteus medius. A Cobb elevator is placed under the gluteus medius, then replaced with a Blunt Hohmann Retractor (P/N 20073114). Have an assistant use gentle pressure to maintain position of the retractor while protecting the gluteus medius. The blade of the blunt Hohmann retractor should not be forced beyond 90° from the wound and should now be resting in the interval between the gluteus medius and gluteus minimus.

The release of short, external rotators may be necessary, especially in tight hips. During the learning curve, begin to minimize your incision and release less short, external rotators - eventually resulting in the release of no short, external rotators, with the possible exception of the piriformis.

**Capsular Exposure**

With an assistant abducting and externally rotating the hip (raise the knee while keeping the foot on the Mayo stand) to decrease tension in the external rotators, place a Cobb elevator posteriorly between the piriformis tendon and the gluteus minimus. The sciatic nerve will be protected by the external rotators.

The Cobb elevator is then replaced with a blunt Hohmann retractor, with the blunt Hohmann now resting between the posterior capsule and the external rotators. The blade of the blunt Hohmann should not be forced beyond 90°, and the handles of the Hohmann retractors should be parallel to one another. The knee is then lowered, and the leg returned to the “home position.” If excessive force is generated by the piriformis tendon, it can be released at this time under direct visualization.

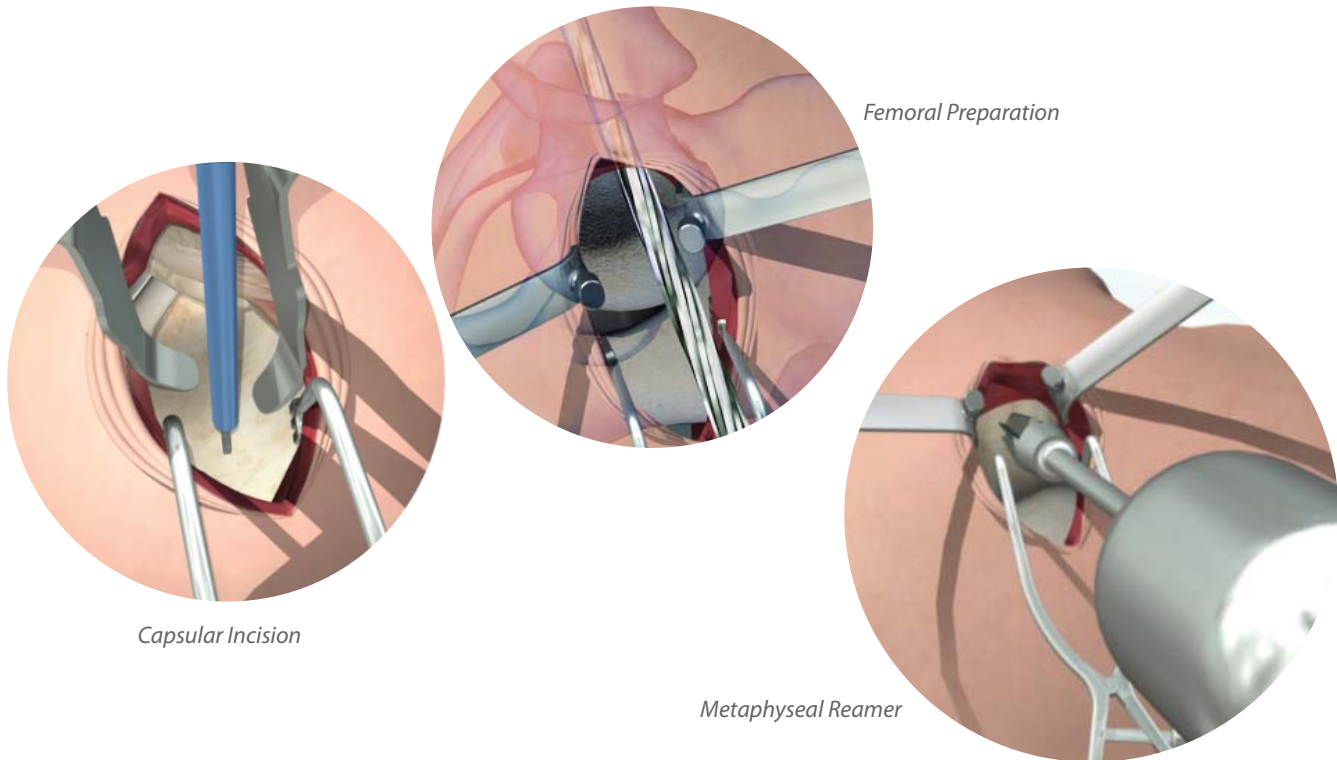


Wing-Tipped Elevator  
P/N 20070038

Bent Wing-Tipped Elevator  
P/N 20070040

Blunt Hohmann Retractor  
P/N 20073114





Capsular Incision

Femoral Preparation

Metaphyseal Reamer

### Capsular Incision

Use a Cobb elevator to gently push the posterior border of the gluteus minimus anteriorly to expose the underlying capsule. The capsule is then incised in-line with the main incision using electrocautery. Electrocautery with a long tip should be used to incise the trochanteric fossa to prevent bleeding of the anastomosis around the base of the femoral neck. Ensure complete preparation of the entire saddle portion of the femoral neck and greater trochanter using electrocautery. Over-preparation is much better than under-preparation in regards to reducing bleeding amongst the many recurrent vessels in this area.

The capsulotomy is extended from the saddle of the femoral neck to 1cm proximally on the acetabulum. Carefully peel the 1cm capsular attachment subperiosteally off of the acetabular rim, extending 1cm anteriorly and posteriorly. Limit this part of the dissection to only 1cm in all directions, and have an assistant notify you of any foot movement as the sciatic nerve lies 2cm posteriorly. The capsular incision should be a simple, straight line and will be repaired like a rotator cuff at the end of the case.

With an assistant lifting the knee to decrease external rotator tension, a Cobb elevator is placed intra-articularly between the posterior capsule and the posterior femoral neck. The Cobb elevator is then replaced with the blunt Hohmann retractor that was previously located at the posterior capsule, and the leg is returned to the “home position.” The anterior blunt Hohmann retractor is re-positioned intra-articularly in a similar fashion. The capsule is tagged for identification during repair, and the piriformis fossa, the tip of greater trochanter and the anterior femoral neck (Saddle) are isolated.

### Femoral Preparation

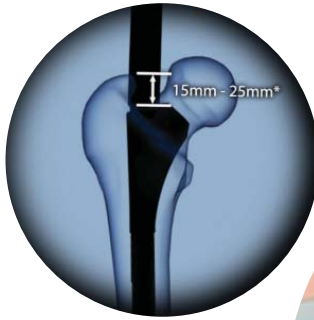
The femur is reamed and broached with the head intact to minimize the risk of a femoral neck fracture. With an assistant applying gentle adduction pressure to the knee, the saddle of the femoral neck is presented into the incision. Using a Starter Reamer (P/Ns PRR00080 or 4700R09000; not included in SuperPATH® instrumentation), enter the femoral canal through the trochanteric fossa.

The Metaphyseal Reamer (P/N PTMR0001) can be used to expand the proximal opening, ensuring that subsequent instruments are properly aligned and not positioned *in varus*.

Metaphyseal Reamer  
P/N PTMR0001



Femoral Canal Preparation



Femoral Broaching

To allow for easier insertion of the femoral broaches, the appropriately sized Round Calcar Punch (P/Ns 20070052, 20070053 and 20070054) and Impactor Handle (P/N 8000010) are utilized. Begin by opening the neck, starting at the reamer opening, and create a slot towards the acetabular rim.

Have an assistant apply additional adduction pressure to maximize the exposure.

The Calcar Curette (P/N 20071006) is then introduced into the femur to prepare the proximal-medial portion of the canal, making sure the surface provides good cortical contact to promote bone on-growth while preventing subsidence and micromotion.

### Femoral Broaching

To prepare the femoral canal, broaches are utilized according to the appropriate ream-and-broach or broach-only stem selected. The Slotted Broach Handle (P/N SLBROHAN; not included in SuperPATH® instrumentation) includes measurement markings to facilitate in the determination of the depth of the top of the broach with regards to the tip of the greater trochanter. The depth is typically 15 - 25mm and varies depending on patient anatomy and preoperative leg length discrepancy and can also be checked using the Canal Feeler (P/N 20071008). Once the final broach is seated, the broach handle is removed and the broach is used as an internal neck cutting guide.



Calcar Curette  
P/N 20071006



Round Calcar Punch Small  
P/N 20070052



Round Calcar Punch Medium  
P/N 20070053



Round Calcar Punch Large  
P/N 20070054



Slotted Broach Handle  
P/N SLBROHAN



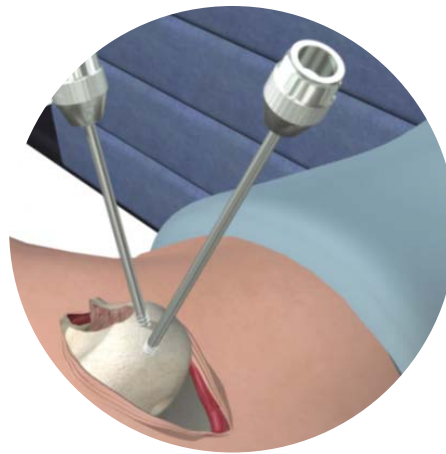
Canal Feeler  
P/N 20071008



*Femoral Head Resection*

**Femoral Head Resection**

To bring the plane of the femoral neck osteotomy in-line with the surgical wound, have an assistant lift the knee in slight hip abduction. An oscillating saw with a narrow blade is used to create the femoral neck osteotomy along the top of the broach (P/N PLSB0015, for example). The anterior and posterior sections of the cut are completed using a reciprocating saw.



*Femoral Head Removal*

**Femoral Head Removal**

A Schanz Pin (P/N 20070057) is inserted into a solid part of the head, and the pin is levered to rotate the head into maximum adduction. A second Schanz pin is then placed into another solid part of the head and, using the drill chucks still attached, the femoral head is pulled from the main incision.

Should the head be difficult to extract, the first pin can be removed and the head rotated further into adduction before inserting another pin. The femoral head can continually be “walked” into maximal adduction until the ligamentum teres is either torn or is presented so that it may be severed with electrocautery.



*PROFEMUR® RENAISSANCE® Broach  
P/N PLSB0015*



*Schanz Pin  
P/N 20070057*



Acetabular Preparation

**Acetabular Preparation**

With the leg in the “home position,” two Spiked Hohmann Retractors (P/N 20073113) are placed into the axilla between the capsule and the labrum on both the front and back sides of the acetabulum. Under direct visualization, remove any remaining tissue from the acetabulum, as well as the labrum. The obturator artery is often encountered posteriorly. After removal of soft tissue, bleeding can be controlled using electrocautery (a long tip is recommended).

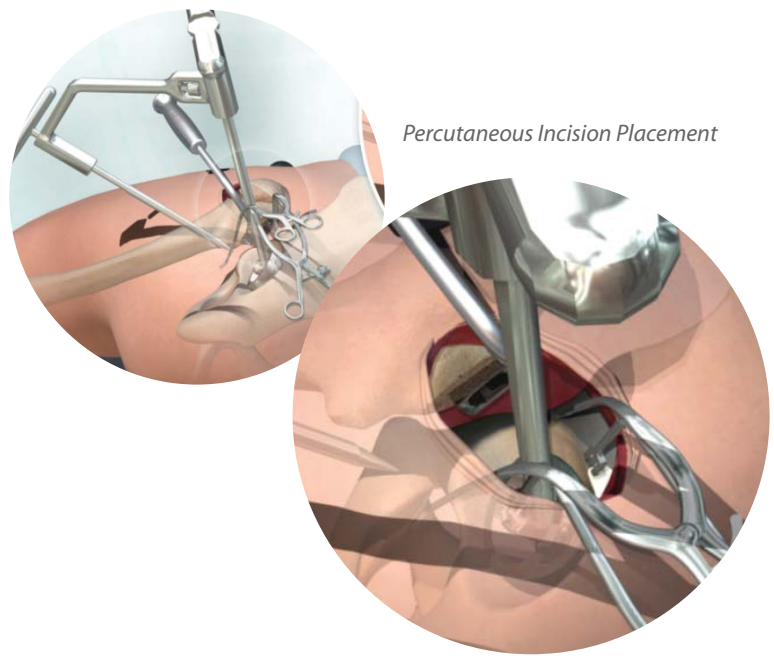
Place a Zelpi Retractor (P/N 20071004) subperiosteally at the acetabular margin at the proximal incision, and a Romanelli Retractor (P/N 20071001) immediately distal intra-articularly. The combination of these self-retaining retractors will provide rotational stability, as well as create a surface on which to introduce the reamers and the implant into the joint. The spiked Hohmann retractors are now removed.



Spiked Hohmann Retractors  
P/N 20073113

Romanelli Retractor  
P/N 20071001

Zelpi Retractor  
P/N 20071004

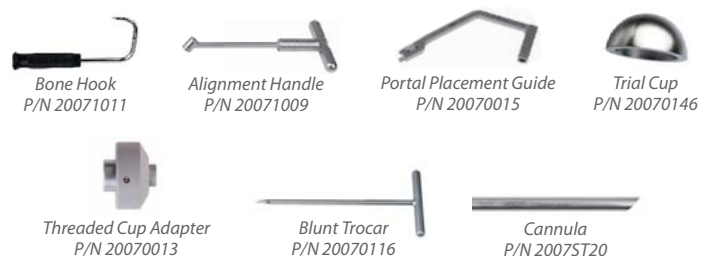


Percutaneous Incision Placement

**Percutaneous Incision Placement**

With the leg still in the “home position,” have an assistant insert the tip of the Bone Hook (P/N 20071011) into the top of the broach and retract the femur anteriorly. The Alignment Handle (P/N 20071009)/Portal Placement Guide (P/N 20070015)/Threaded Cup Adapter (P/N 20070013)/ Trial Cup (P/N 20070146) Assembly are seated in the acetabulum with the top of the guide perpendicular to the patient’s torso, and the guide shaft tilted 10°-15° from vertical to account for the pelvic tilt of the patient on the table.

The Blunt Trocar (P/N 20070116) with Cannula (P/N 2007ST20) is inserted until resting against the operative leg. At the point where the blunt Trocar intersects the leg, a 1cm stab incision is made horizontally. The blunt Trocar and Cannula are then passed through the stab incision and 1-2cm posterior to the femur until they are visible through the main incision.



Bone Hook  
P/N 20071011

Alignment Handle  
P/N 20071009

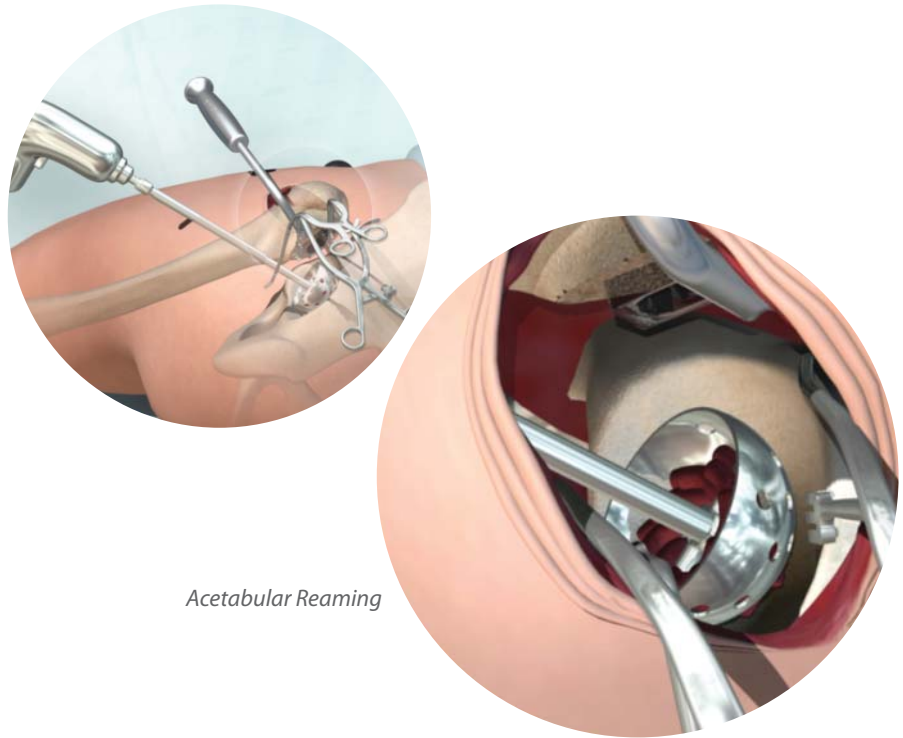
Portal Placement Guide  
P/N 20070015

Trial Cup  
P/N 20070146

Threaded Cup Adapter  
P/N 20070013

Blunt Trocar  
P/N 20070116

Cannula  
P/N 2007ST20



Acetabular Reaming

The Alignment Handle / Portal Placement Guide / Threaded Cup Adapter / Trial Cup Assembly and blunt Trocar are then removed, leaving the Cannula in place. The Cannula can be easily moved for directional reaming by positioning the leg.

### Acetabular Reaming

Using the Reamer Basket Holder (P/N 20070048), pass the appropriately-sized Hex Acetabular Reamer (P/Ns PATHRM40 - PATHRM65 or SPTHRM40-SPTHRM65; not included in SuperPATH® instrumentation) into the main incision. The Reamer Shaft (P/N 20070011) is passed through the Cannula and mated to the Hex Acetabular Reamer *in situ*. Acetabular preparation is performed using the preferred reaming method. Medial reaming is often carried out through the main incision prior to deepening/enlarging the acetabulum.



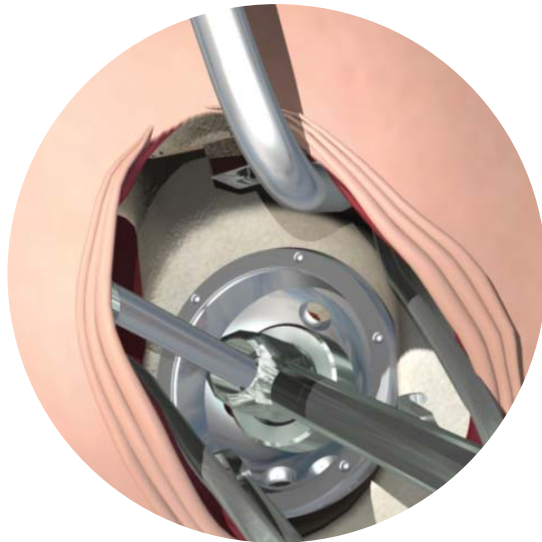
Hex Acetabular Reamer  
P/Ns PATHRM40 - PATHRM64  
or SPTHRM40-SPTHRM65



Reamer Basket Holder  
P/N 20070048



Reamer Shaft  
P/N 20070011



Cup Placement

### Cup Placement

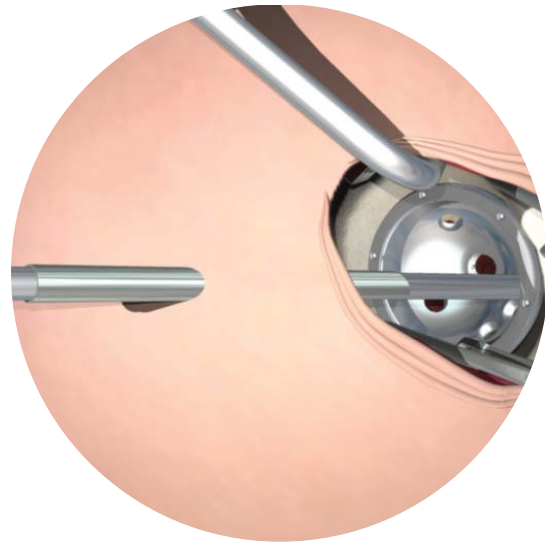
The Threaded Cup Adapter is threaded into the apical hole of the acetabular cup, and the assembly is seated on the Alignment Handle. The Alignment Handle is designed to provide 25° anteversion when perpendicular to the torso of the patient, and 40° abduction when perpendicular to the floor.

With the acetabular cup in the acetabulum, the Alignment Handle is directly driven to medialize the cup. The Cup Impactor (P/N 20071010) is inserted through the Cannula and the tip of the Alignment Handle until seated in the dimple of the Threaded Cup Adapter. With the Alignment Handle shaft again tilted 10° - 15° from vertical to account for the pelvic tilt of the patient on the table, the Cup Impactor is impacted until the cup is firmly seated. An Alignment Guide (P/N 33330080) is available (kit DNFLKIT1) for attachment on the Cup Impactor.

With the cup firmly seated, the Threaded Cup Adapter is unscrewed from the cup using the hex tip of the Cup Impactor, and removed using the Reamer Basket Holder.



Cup Impactor  
P/N 20071010



Screw Placement

### Screw Placement

Pilot holes for the placement of acetabular screws are created by inserting the Long Drill Tube (P/N 20071012) through the Cannula until it engages the desired hole in the acetabular cup. The Screw Drill (P/N 20071007) is then passed through the Long Drill Tube. Using the measurement markings on the end of the Screw Drill, drilling is carried out to the desired depth. The Screw Drill and Long Drill Tube are removed. Additionally, pilot holes can be created in a similar fashion using the Drill Tube (P/N 20071005) and a Schanz pin. When using this combination, the Schanz pin is advanced until bottoming on the Drill Tube. With continued revolutions of the pin, the threaded bone is stripped and a hole with a depth of 30mm is created.

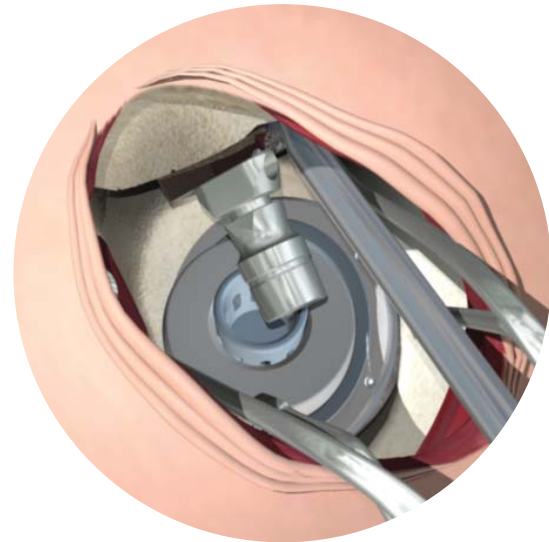
*CAUTION: The Screw Drill (P/N 20071007) is only to be used with the Long Drill Tube (P/N 20071012) and is not to be used with the Drill Tube (P/N 20071005) as the depth dimensions will not be accurate.*



Screw Drill  
P/N 20071007



Long Drill Tube  
P/N 20071012



*Trial Reduction*

Screws can be held in position using a set of Screw Holding Forceps (P/N 48205H0000; available in kit 8400KIT1) through the main incision, and the Ball Joint Screwdriver (P/N 20071002) or Straight Screwdriver (P/N 20071003) is attached to the Ratchet Screwdriver Handle (P/N 2002QCRH; available in kit 8400KIT1) and passed through the Cannula to engage and tighten the screw(s).

**Trial Reduction**

Femoral head and neck trials are chosen by measuring the bone resection or using the components identified during pre-operative templating. Place the PROFEMUR® Metal Trial Neck (P/Ns APA12102 - APA12154) into the seated broach while controlling the leg position. A set of forceps with angled tips will facilitate this maneuver. Place the Trial Head (P/N APA02121 - APA02154, or combination of P/Ns 41102800 - 41104800 and APA0TSS3 – APA0TSL3 if large femoral heads with neck sleeves are used; not included in SuperPATH® instrumentation) in the socket and rotate its opening to a superior-posterior position. With the tip of the blunt Trocar inserted into the top of the broach, mate the trial neck into the trial head. During this maneuver, the surgeon controls the leg by pushing and translating the hip under direct visualization through the main incision, while an assistant controls the internal/external rotation of the hip by raising or lowering the foot or knee.



*Straight Screwdriver  
P/N 20071003*

*Ball Joint Screwdriver  
P/N 20071002*

*PROFEMUR® Metal Trial Neck  
P/Ns APA12102 - APA12154*

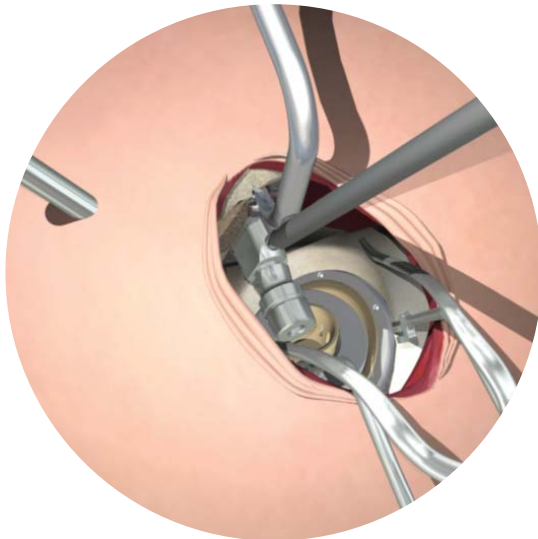
*Ratchet Screwdriver Handle  
P/N 2002QCRH*

*Screw Holding Forceps  
P/N 48205H0000*

*Trial Head  
P/N APA02121 - APA02154*

*CONSERVE® Trial Head  
P/Ns 41102800 - 41104800*

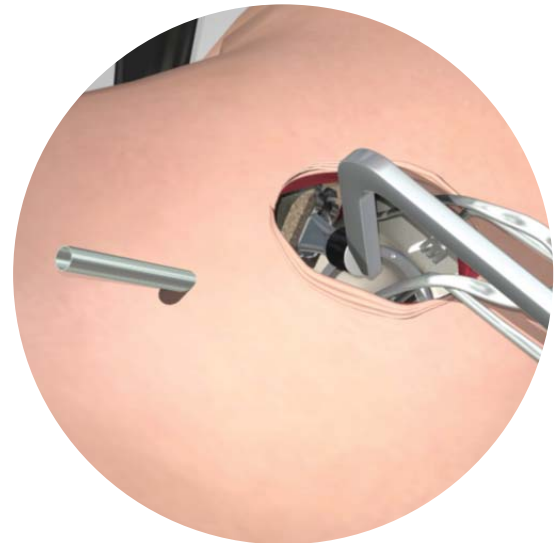
*CONSERVE® Neck Sleeve  
P/Ns APA0TSS3 – APA0TSL3*



*Trial Disassembly*

**Trial Disassembly**

With the leg in the “home position,” an assistant places the tip of the Bone Hook into the top of the broach and applies lateral traction to the leg. Place the tip of the blunt Trocar into the superior hole in the trial neck. By engaging the side of the blunt Trocar into the slot near the tip of the Bone Hook and levering the two instruments against each other, the trial neck is disassembled from the broach. The trial components, including the femoral broach, are then removed.



*Implant Assembly*

**Implant Assembly**

After the associated tapers are cleaned and dried, the liner implant of the acetabular cup is then impacted into position using the Cup Impactor (through the Cannula) and the appropriate Liner Impactor (P/Ns 20070023 - 20070025)

The femoral stem is impacted into position. The depth of the stem from the tip of the Greater Trochanter can be confirmed using the measurement markings on the end of the Canal Feeler. The femoral head implant (with neck sleeve if a large femoral head is selected) is placed into the cup with the opening in a superior-posterior position. If the stem selected is modular, the modular neck implant is placed into the femoral stem pocket using a set of forceps with coated, angled tips to protect the neck taper.

**ATTENTION:** To properly assemble and impact a PROFEMUR® Modular Neck, ensure that the modular neck and stem pocket tapers are clean and dry, and seat the modular neck using the Offset Neck Impactor (P/N 20073009) with three very firm blows from a mallet.



*Offset Neck Impactor  
P/N 20073009*



*Liner Impactor  
P/Ns 20070023 - 20070025*





With the tip of the blunt Trocar inserted into the top of the stem, the modular neck is mated into the femoral head after the neck and head tapers are cleaned and dried. As in the trial reduction maneuver, the surgeon controls the leg by pushing and translating the hip under direct visualization through the main incision, while an assistant controls the internal/external rotation of the hip by raising or lowering the foot or knee. Stability of the joint is verified by checking the range of motion, and proper leg length is also confirmed.

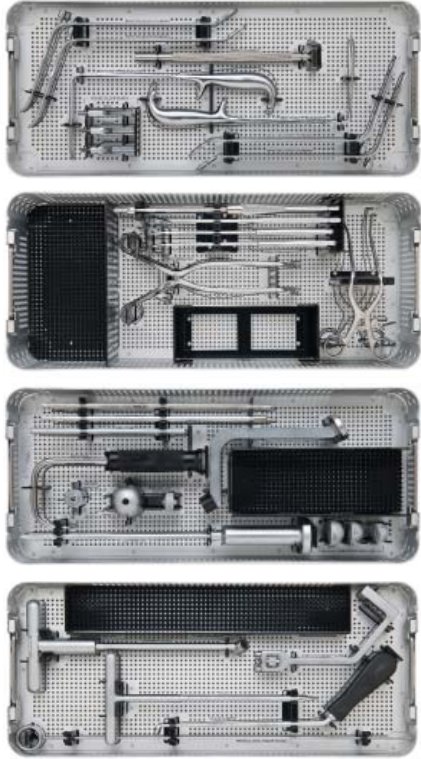
**NOTE:** If using a ceramic head, securely fix the neck into the stem by impaction, then place the head on the neck by hand, push and turn the head 180 degrees to securely lock it in place.

#### Closure

The entire capsule has been preserved, and can be easily re-approximated in-line with the incision. Closure begins by approximating the joint capsule superiorly and inferiorly. If released, the piriformis is reattached to the posterior edge of the gluteus medius. The remainder of the incision is closed in standard fashion.

# Chapter 4

## Ordering Information



*Included also in SPTHKIT3*

Additional items that must be ordered separately:

Part Number	Description
2007ST20	
20070120	CANNULA or SHORT CANNULA (individually packaged sterile)
20070057	SCHANZ PIN (individually packaged sterile)
20071007	SUPERPATH® SCREW DRILL (individually packaged sterile)
33330080	ALIGNMENT GUIDE (available in kit DNFLKIT1)
PRR00080	
APA04750	STARTER REAMER (available in kits PLREKIT2/PRZNKIT2 or PRGIKIT1)
PHRMKIT1 or SPRMKIT1	HEX ACETABULAR REAMER BASKETS
2002QCRH	QUICK CONNECT RACHET HANDLE (available in kit 8400KIT1 or SPRMKIT1)

### SUPERPATH® Hip Technique Instruments (Kit SPTHKIT3)

Part Number	Description
20070013	THREADED CUP ADAPTOR
20070015	PORTAL PLACEMENT GUIDE
20070023	LINER IMPACTOR 28MM ID
20070024	LINER IMPACTOR 32MM ID
20070025	LINER IMPACTOR 36MM ID
20070040	BENT WING-TIPPED ELEVATOR
20070052	ROUND CALCAR PUNCH SMALL
20070053	ROUND CALCAR PUNCH MEDIUM
20070054	ROUND CALCAR PUNCH LARGE
20070110	ACETABULAR REAMER ADAPTER
20070116	BLUNT TROCER
20070146	ACETABULAR TRIAL CUP
20071003	SUPERPATH® STRAIGHT SCREWDRIVER
20071005	SUPERPATH® DRILL TUBE (use with 20070057)
20071009	SUPERPATH® ACETABULAR ALIGNMENT HANDLE
20071010	SUPERPATH® CUP IMPACTOR
20071011	SUPERPATH® BONE HOOK
20073009	OFFSET NECK IMPACTOR
20073061	TRIAL LINER REMOVER
20073113	IMPACTING SPIKED HOHMANN
20073114	IMPACTING BLUNT HOHMANN
80000010	TRANSCEND® INSERT IMPACTOR HANDLE
APA12102	PROFEMUR® METAL TRIAL NECK STRAIGHT SHORT
APA12104	PROFEMUR® METAL TRIAL NECK STRAIGHT LONG
APA12112	PROFEMUR® METAL TRIAL NECK AR/VV 1 SHORT
APA12114	PROFEMUR® METAL TRIAL NECK AR/VV 1 LONG
APA12122	PROFEMUR® METAL TRIAL NECK AR/VV 2 SHORT
APA12124	PROFEMUR® METAL TRIAL NECK AR/VV 2 LONG
APA12132	PROFEMUR® METAL TRIAL NECK 8DG A/R SHORT
APA12134	PROFEMUR® METAL TRIAL NECK 8DG A/R LONG
APA12142	PROFEMUR® METAL TRIAL NECK 15DG A/R SHORT
APA12144	PROFEMUR® METAL TRIAL NECK 15DG A/R LONG
APA12152	PROFEMUR® METAL TRIAL NECK 8DG V/V SHORT
APA12154	PROFEMUR® METAL TRIAL NECK 8DG V/V LONG
PRMNCAD1	PROFEMUR® METAL TRIAL NECK CADDY
PTMR0001	PROFEMUR® METAPHYSEAL REAMER
20070038	WING-TIPPED ELEVATOR
20071001	ROMANELLI RETRACTOR
20071002	SUPERPATH® BALL JOINT SCREWDRIVER
20071004	ZELPI RETRACTOR
20071006	SUPERPATH® CALCAR CURETTE
20071008	FEMORAL CANAL FEELER GAGE
20071012	SUPERPATH® DRILL TUBE LONG (use with 20071007)



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