ADVANCE®

Revision Stemmed Medial Pivot
Knee System

SURGICAL TECHNIQUE

Create Motion.™ WRIGHT.

ADVANCE®
revision knee SYSTEM

SURGEON DESIGN TEAM

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ADVANCE®
revision | **STEMMED MEDIAL PIVOT KNEE SYSTEM**

introduction

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

Due to the unpredictable nature of revision knee surgery, surgeons require a revision knee system that provides a comprehensive implant offering. The ADVANCE® Revision System not only features numerous surgical options, but also addresses revision surgery through two rationales: the time-tested and the innovative.

This is evident in the two femoral components comprising the ADVANCE® Revision Knee System. The original revision component is a clinically proven posterior stabilized implant, featuring a spine and cam mechanism designed by the Hospital for Special Surgery (HSS). The newest addition, the bone-conserving ADVANCE® Stemmed Medial Pivot Femur, features a ball-in-socket articulation that replaces the cruciates, provides stability, and replicates natural knee kinematics.

Although providing stability differently, both components feature the same surgical options that have proven to address even the most complex revision situations.

ADVANCE®
revision knee **SYSTEM**

MINUS CONSTRAINED INSERTS, IN CONJUNCTION WITH A PLUS-SIZED TIBIAL BASE, PROVIDE 1 UP/1 DOWN INTERCHANGEABILITY WITHOUT COMPROMISING TIBIOFEMORAL CONTACT AREA.

The ADVANCE® Revision femoral component was designed in conjunction with the Hospital for Special Surgery. Its patented spine and cam mechanism boasts unparalleled clinical success. It accepts either a traditional posterior stabilized insert or a constrained insert to provide rigid internal/external and varus/valgus constraint to address ligamentous instability.

THE ANTERIOR LOCATION OF THE FEMORAL STEM RESTORES ANATOMIC ALIGNMENT, OPTIMIZES CONTACT WITH ANTERIOR BONE, AND PROPERLY RESTORES THE FLEXION GAP.

TRADITIONAL POSTERIOR STABILIZED INSERTS FEATURING THE PATENTED HSS SPINE AND CAM MECHANISM ARE COMPATIBLE WITH REVISION FEMORAL COMPONENTS.

POSTERIOR AND DISTAL FEMORAL AUGMENTS (5 & 10MM) MAY BE PLACED INDEPENDENTLY AND UTILIZE A CLINICALLY PROVEN SCREW FIXATION TO PROVIDE RIGID FIXATION.

TAPERED CEMENTED STEM EXTENSIONS ARE OFFERED IN A VARIETY OF DIAMETERS TO MEET SPECIFIC PATIENT NEEDS.

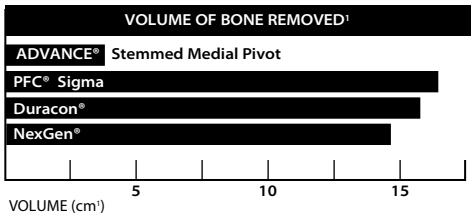
CANAL-FILLING STEMS WITH SPLINES AND FLUTES PROVIDE IMMEDIATE FIXATION AND TORSIONAL RESISTANCE. THE FLEXIBLE CORONAL SLOT PROVIDES A DYNAMIC STRUCTURE TO ADDRESS LONG-TERM ENDOSTEAL BONE CHANGES.

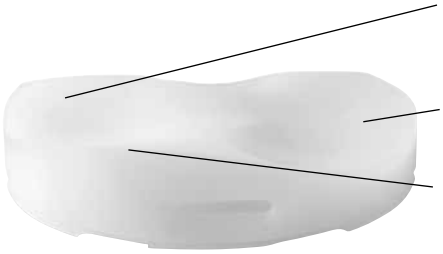
BLOCK (5, 10, AND 15MM) AND WEDGE (15°) AUGMENTS FEATURE A UNIQUE 3-POINT CENTERING MECHANISM THAT REDUCES METAL ON METAL DEBRIS GENERATION AND PROVIDES RIGID FIXATION OF THE TIBIAL BASE/AUGMENT INTERFACE.

ADVANCE®
revision knee STEMMED MEDIAL PIVOT KNEE SYSTEM

DISTAL FEMORAL CONDYLES FORM PARTIAL SPHERE.

The ADVANCE® Stemmed Medial Pivot replicates normal knee kinematics and provides greater stability than standard posterior stabilized knees, while requiring 60 - 80% less bone removal than traditional revision femoral components.





MEDIAL SURFACE MATCHES SPHERICAL CONDYLAR SHAPE TO FORM 'BALL-IN-SOCKET' ARTICULATION.

LATERAL SURFACE ALLOWS ANATOMIC TRANSLATION.

RAISED MEDIAL ANTERIOR LIP PROVIDES RESISTANCE TO ANTERIOR FEMORAL TRANSLATION.

THE ANTERIOR LOCATION OF THE FEMORAL STEM RESTORES ANATOMIC ALIGNMENT, OPTIMIZES CONTACT WITH ANTERIOR BONE, AND PROPERLY RESTORES THE FLEXION GAP.

THE MEDIAL 'BALL-IN-SOCKET' ARTICULATION ALLOWS THE STEMMED MEDIAL PI VOT TO BE USED WITHOUT THE PCL, WHILE PROVIDING ENHANCED A/P STABILITY AND MAXIMUM CONTACT AREA EVEN INTO DEEP FLEXION. COMBINED WITH A LATERAL ARCUATE TROUGH, WHICH ALLOWS 15° OF ANTERIOR/POSTERIOR TRANSLATION, NORMAL KNEE MOTION IS RESTORED.

THE STEMMED MEDIAL PIVOT UTILIZES THE SAME AUGMENTS, STEM EXTENSIONS, AND TIBIAL BASE AS THE TRADITIONAL ADVANCE® REVISION.

ADVANCE®
revision | **STEMMED MEDIAL PIVOT KNEE SYSTEM**

SURGICAL TECHNIQUE

preoperative PLANNING

Initial exposure and the methods used for removal of existing implants are left to the discretion of the surgeon. Conservation of bone should be of paramount importance throughout the surgical procedure.

FIGURE 1

1 | TIBIAL PREPARATION

Intramedullary or extramedullary tibial resection instruments may be used with the ADVANCE® Revision Knee System. The recommended posterior tibial slope is 3° to replicate the 3° posterior slope of the tibial stem relative to the tibial base.

INTRAMEDULLARY TIBIAL RESECTION

If necessary, a 3/8" (9.5mm) starter reamer is used to initiate an opening in the proximal tibia just posterior to the original attachment point of the anterior cruciate ligament. Begin an initial reaming process with the 10mm or appropriate size reamer to establish the anatomic axis of the proximal tibia | **FIGURE 1**. Hand reaming may be appropriate to avoid a thin tibial cortex that could result in a fracture. Reamers are available in 10-23mm diameters in 1/2mm increments and are marked for 65mm, 100m, and 140mm lengths | **A IN FIGURE 2**. The size of the canal filling and cemented stem extensions indicates the overall outside diameter of the implant. For example, reaming to a 12mm diameter for a 13mm canal filling stem will provide a 1/2mm press-fit per side while reaming to a 12.5mm reamer will provide a 1/4mm press-fit per side. For a 12mm cemented stem extension, reaming to 13mm will provide a 1/2mm per side cement mantle while reaming to 14mm will provide a 1mm per side cement mantle.

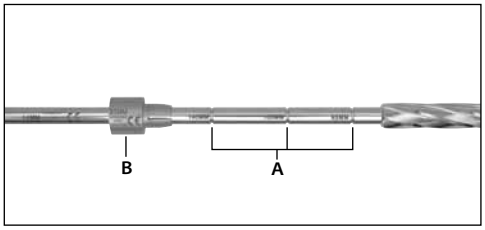


FIGURE 2

With desired reaming complete, ensure the reamer provides a stable construct for additional tibial preparation. If additional stability is required due to a large opening at the proximal tibia, stabilizing collets | **B IN FIGURE 2** are available in 16, 18, 20, 22, and 24mm diameters. Place the appropriate size stabilizing collet over the reamer shank, inferior to the proximal surface of the tibia | **FIGURE 3**. Ensure that the stabilizing collet is recessed below the planned level of proximal tibia resection so the intramedullary alignment guide can be placed at the proper position.

FIGURE 3

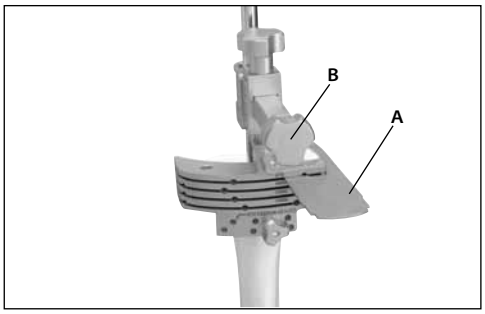


FIGURE 4

With the final reamer in place, assemble the IM tibial alignment guide and appropriate left or right block or wedge tibial crosshead and attach the entire construct to the fixed reamer. Adjust the alignment guide to the correct resection level with the aid of a saw blade, dual reference gauge | **A IN FIGURE 4**, or stylus, ensuring a minimal resection will be made off the most prominent tibial plateau. Turn the locking screw to lock the IM tibial alignment guide to the IM reamer | **B IN FIGURE 4**. Pin the crosshead to the proximal tibia. A proximal tibial resection can be made with or without the alignment guide and reamer in place.

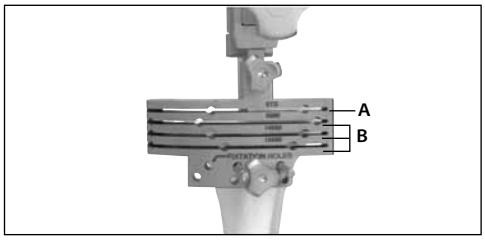


FIGURE 5

BLOCK OR WEDGE AUGMENTATION

If necessary, begin by making a proximal "clean-up" resection along the most prominent condyle through the 0mm resection slot | **A IN FIGURE 5**. If block augmentation is needed, the block crosshead provides resection slots for a 5, 10 and 15mm augment that can be placed independently on the medial or lateral side of the tibia | **B IN FIGURE 5**. If wedge augmentation is needed, the wedge crosshead provides a 15° wedge resection slot | **FIGURE 6**.

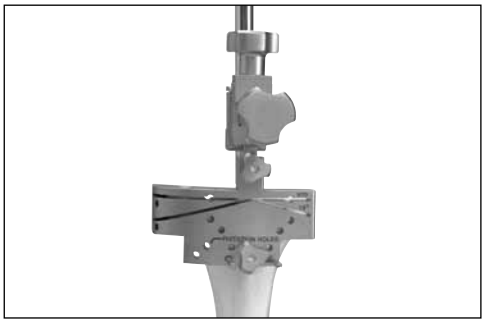
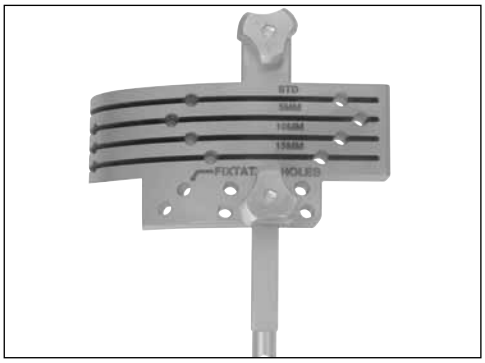


FIGURE 6

EXTRAMEDULLARY TIBIAL RESECTION

IMPORTANT NOTE | The extramedullary alignment guide is contraindicated for a long stemmed tibial prosthesis. If a 100mm or 140mm stem is needed, the intramedullary tibial alignment system is recommended.

Assemble the extramedullary alignment guide and appropriate left or right block or wedge augment crosshead | **FIGURE 7**. Ensure the resection guide is positioned to 3° of posterior slope | **A IN FIGURE 8** and the medial-lateral adjustment is set to zero | **B IN FIGURE 8**. Position the ankle yoke against the lower leg just proximal to the malleoli and wrap the spring around the leg.



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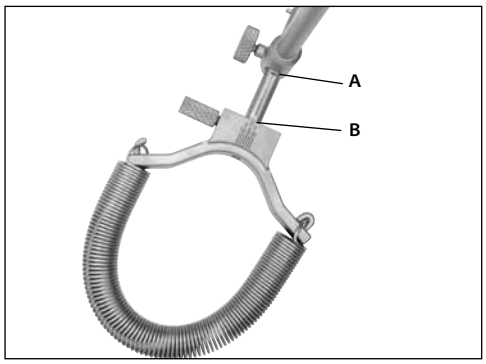

FIGURE 8

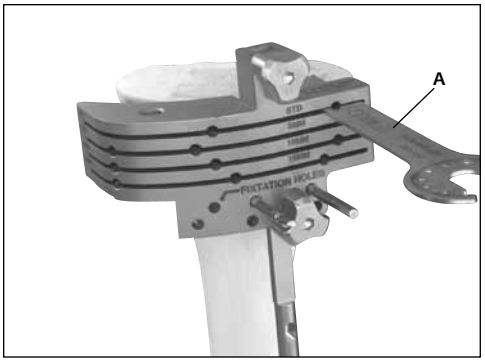

FIGURE 9

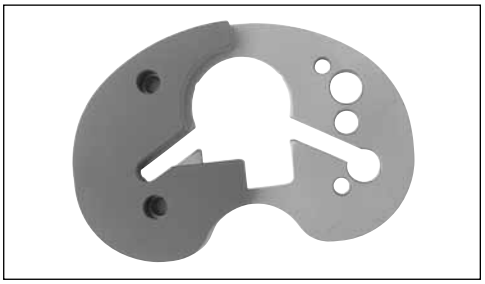

FIGURE 10

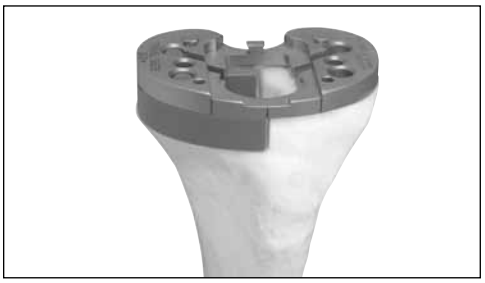

FIGURE 11

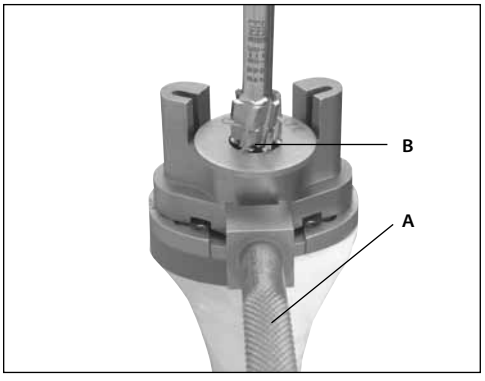

FIGURE 12

Adjust the alignment guide to the correct resection level with the aid of a saw blade | **A IN FIGURE 9**, dual reference gauge, or stylus, ensuring a minimal resection will be made off the most prominent tibial plateau. Pin the crosshead in place. The proximal resection can be made with or without the extra-medullary alignment guide in place. Follow the steps provided in the BLOCK AND WEDGE AUGMENTATION section for the block and wedge augment procedures.

2 | TIBIAL SIZING AND KEEL PREPARATION

Select the trial tibial base that provides the optimal proximal tibial bone coverage. Assemble the selected trial tibial base with the appropriate size and thickness augment trial | **FIGURE 10**. Place the assembled construct on the proximal tibia | **FIGURE 11**. If the size is appropriate, align the base and pin it to the tibia using short headed anchoring pins. Attach the keel punch guide to the keel punch handle and secure it to the trial base by turning the knurled handle | **A IN FIGURE 12**. If the tibial shaft has not been reamed to 15mm, prepare the fixed stem portion of the tibial stem with the press-fit or oversize drill guide and reamer. Ream to the first line for size 1, 1+, or 2 base, to the second line for 2+, 3, 3+, or 4 base, and to the third line for a 4+, 5, 5+, or 6 base | **B IN FIGURE 12**.

CAUTION: Use extreme caution when preparing for the tibial keel in sclerotic tibial bone.

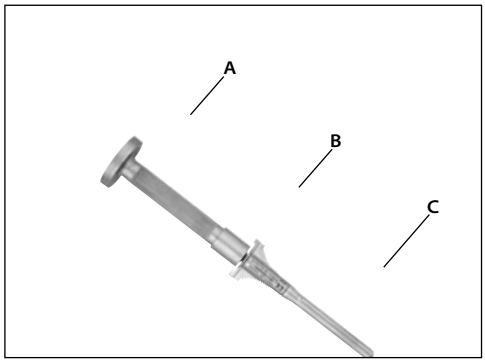

FIGURE 13

Assemble the threaded punch handle | **A IN FIGURE 13,** appropriate size keel punch | **B IN FIGURE 13,** and the appropriate size tibial stem trial | **C IN FIGURE 13.**

IMPORTANT NOTE | Ensure that the keel punch size range matches the trial tibial base size. The following chart explains the correct instrument combinations.

TRIAL TIBIAL BASE SIZE CORRESPONDING KEEL PUNCH SIZE

TRIAL TIBIAL BASE SIZE	KEEL PUNCH OPTIONS
1	1/1+/2
2/1+	1/1+/2
3/2+	2+/3/3+/4
4/3+	2+/3/3+/4
5/4+	4+/5/5+/6
6/5+	4+/5/5+/6

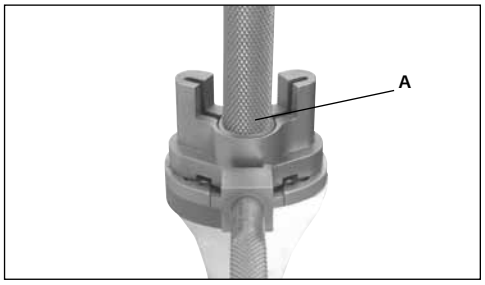

FIGURE 14

Slide the assembled instrument through the punch guide until the punch is fully seated | **A IN FIGURE 14.** This trial tibial base construct provides a means to establish proper flexion-extension gaps and final preparation of femoral alignment and size.

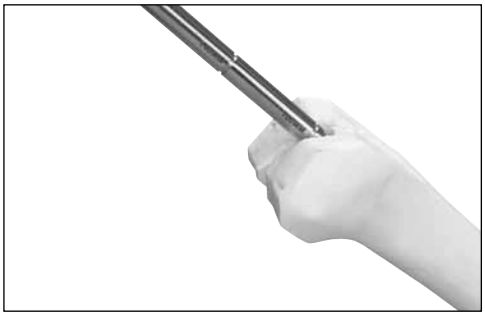

FIGURE 15

3 | PREPARATION OF THE DISTAL FEMUR

STARTER HOLE PREPARATION

If necessary, initiate an opening in the femoral canal with the 3/8" (9.5mm) diameter starter reamer. The entry point is placed medial and anterior to the anteromedial corner of the intercondylar notch.

FEMORAL INTRAMEDULLARY CANAL REAMING

A preliminary reaming process is initiated to establish the anatomic axis of the distal femur. Hand reaming may be appropriate to avoid a thin femoral cortex that could result in a fracture. Begin incrementally reaming with the 10mm or appropriate sized reamer | **FIGURE 15.**

Slight elliptical reaming will prevent the entry point from dictating the path of the reamer. During the reaming process, the intramedullary canal of the femur should be repeatedly irrigated and aspirated to reduce the chance of fat emboli. Hand reaming may be appropriate to reduce the chance of creating a thin femoral cortex that could result in a fracture.

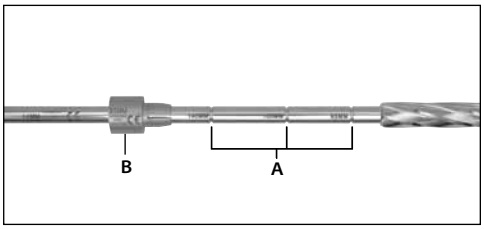

FIGURE 16

FIGURE 17

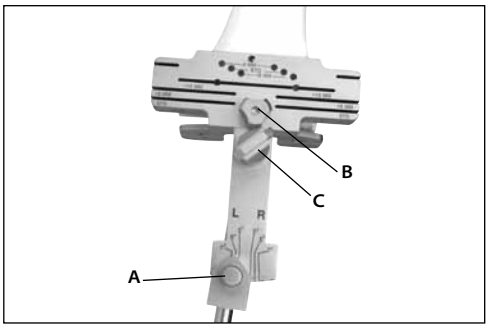

FIGURE 18

Reamers are available in diameters from 10-23mm in 1/2mm increments and are marked at 65, 100, and 140mm lengths | **A IN FIGURE 16.** These lengths correspond to the overall length of the stems when attached to the femoral implant. The size of the canal filling and cemented stem extensions indicates the overall outside diameter of the implant. For example, reaming to a 12mm diameter for a 13mm canal filling stem will provide a 1/2mm press-fit per side while reaming to a 12.5mm reamer will provide a 1/4mm press-fit per side. For a 12mm cemented stem extension, reaming to 13mm will provide a 1/2mm per side cement mantle while reaming to 14mm will provide a 1mm per side cement mantle. With desired reaming complete, ensure the reamer provides a stable construct for additional femoral preparation. If additional stability is required due to a large opening at the distal femur, stabilizing collets are available in 16, 18, 20, 22, and 24mm diameters. Place the appropriate size stabilizing collet over the reamer shank, proximal to the distal surface of the femur| **FIGURE 17.** Ensure that the stabilizing collet is recessed below the planned level of distal femoral resection so that the valgus alignment guide can be seated flush to the distal surface.

DISTAL FEMORAL ALIGNMENT

IMPORTANT NOTE | The valgus angle alignment guide must be set at 5° to match the valgus orientation of the femoral implant stem.

Set the valgus angle to 5° and tighten the small thumb screw | **A IN FIGURE 18.** Attach the revision distal femoral crosshead to the valgus alignment guide and tighten the small screw by hand or with a 3.5mm hexhead screwdriver | **B IN FIGURE 18.** Slide the entire construct over the fixed IM reamer and lock the guide to the reamer by tightening the large thumb screw | **C IN FIGURE 18.**

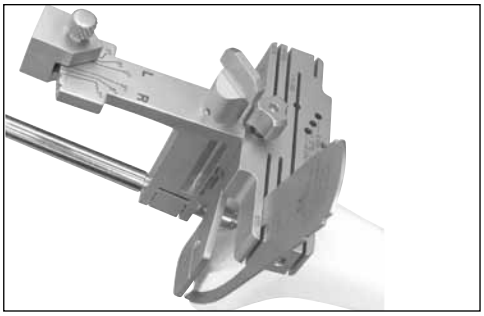

FIGURE 19

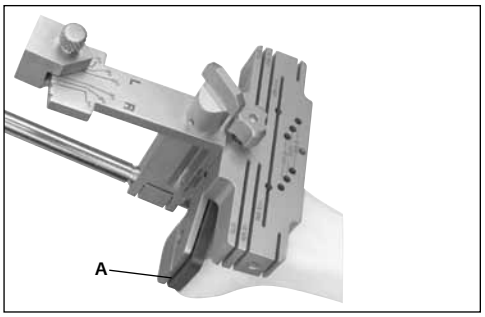

FIGURE 20

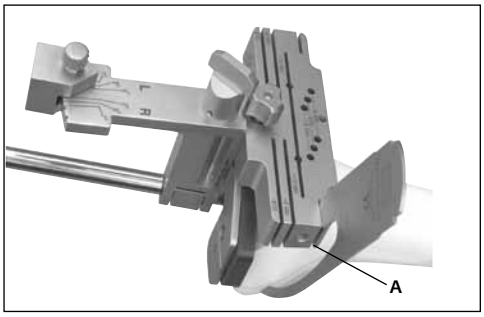

FIGURE 21

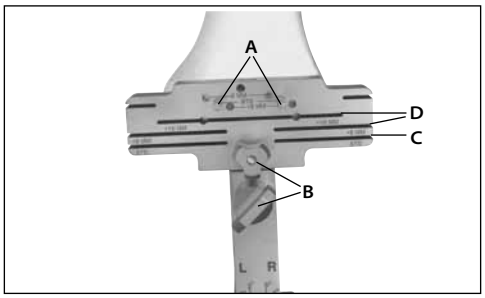

FIGURE 22

DISTAL FEMORAL RESECTION

IMPORTANT NOTE | All ADVANCE® femoral resection slots are designed for use with a .050" (1.3mm) thick saw blade.

The distal femoral resection depth is set using one of two methods:

1 | Position the guide through the standard resection slot with the aid of the dual reference gauge or saw blade slightly proximal to the most prominent condyle **| FIGURE 19.** This will ensure a slight "clean-up" resection along the most prominent condyle surface.

2 | Utilize the 6 or 7 mm spacer between the platform of the valgus alignment guide and the most prominent condyle **| A IN FIGURE 20.** Once assembled, these spacers will provide a 2mm (7mm spacer) or 3mm (6mm spacer) "clean-up" resection along the most prominent condyle surface. A secondary check is available by referencing the line marked "25mm" on the distal crosshead **| A IN FIGURE 21.** By matching the position of this line to the transepicondylar axis, a theoretical placement of the original joint line is indicated **| FIGURE 21.**

CAUTION: Do not place the valgus alignment guide paddles, without spacers, flush against the resected, distal surface as this will result in a 9mm distal resection.

With the guide properly positioned, pin the crosshead by placing 1/8" (3.2mm) headless pins or drill bits into the holes, marked "0mm" **| A IN FIGURE 22.** The distal femoral resection can be performed with or without the IM reamer and valgus alignment guide in place. To remove the guide, loosen both thumb screws **| B IN FIGURE 22.** and disengage the valgus alignment guide from the crosshead. Utilize the T-handle or power drill to remove the reamer. A distal "clean-up" resection is performed on the most prominent condyle through the standard resection slot **| C IN FIGURE 22.** An assessment of the deficient femoral condyle is made, prior to any additional resections. If augmentation is indicated, a resection is made through the 5 or 10mm resection slot **| D IN FIGURE 22.** Varying thicknesses of augments can be placed independently on the medial and lateral condyles.

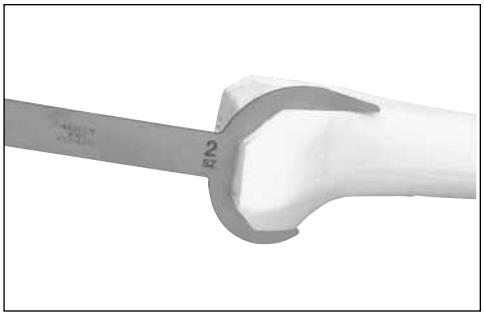

FIGURE 23

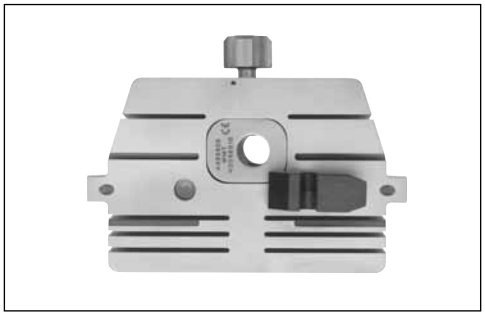

FIGURE 24

FEMORAL SIZING

Femoral implant sizing can be approximated by one of the following methods:

1 | Femoral sizing templates indicate the internal component geometry of each femoral component size | **FIGURE 23.**

2 | Assessment of the extracted femoral component.

3 | Use of trial femoral components.

4 | Pre-operative radiographic evaluation of both knees.

5 | Reference of tibial base sizing.

IMPORTANT NOTE | The ADVANCE® Revision System allows 1 up/1 down femoral-tibial implant size interchangeability only when utilizing a CCK style tibial insert. For all other inserts, the system allows one size larger tibia only. Refer to the size interchangeability chart on page 12 for more detail.

ANTERIOR AND POSTERIOR RESECTIONS

Select the revision femoral resection block corresponding to the size femoral component previously determined. If distal augment resections were made previously, attach the appropriate size and thickness distal augments to the backside of the femoral resection block. Trial augments should be placed into the recessed cavity of the resection block with the long sides facing anterior-posterior to avoid interference with the saw blade during chamfer resections | **FIGURE 24.**

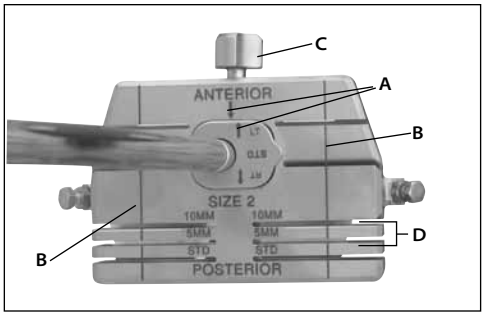

FIGURE 25

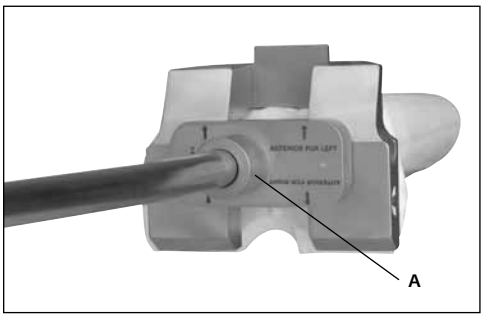

FIGURE 26

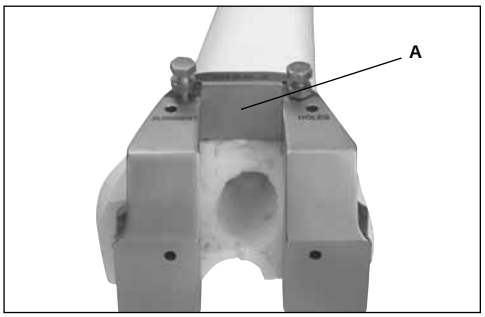

FIGURE 27

Assemble the 5° valgus angle locator with the correct "Left" or "Right" marking facing the arrow on the AP resection block | **A IN FIGURE 25** and place the entire assembly over the fixed IM reamer. Two laser marks on the face of the block indicate the M-L width of the revision femoral component for a final check of femoral sizing | **B IN FIGURE 25**. External rotation can be set by referencing either the medial and lateral epicondyles (transepicondylar axis), the A-P axis of the femur (perpendicular plane to the patellar groove) or by placing the bottom surface of the A-P block perpendicular to the axis of the tibia. Tighten the thumbscrew | **C IN FIGURE 25** and stabilize the block using 1/8" (3.2mm) diameter headed pins on the medial and lateral sides of the block. The fixation holes can be predrilled with a 1/8" diameter drill bit. Femoral resections are performed through the anterior, anterior chamfer, posterior chamfer, and posterior resection slots.

If additional posterior augmentation is necessary, the appropriate 5mm or 10mm augment resections should be completed at this time | **D IN FIGURE 25**. The anterior femoral resection is 6° divergent to the posterior resection.

FEMORAL HOUSING RESECTION

NOTE | The following steps are for use with a conventional revision femoral component. Refer to Appendix B if using a stemmed medial pivot component.

IMPORTANT NOTE | The femoral housing resection guide should always be used when a femoral stem extension is indicated. This will help ensure accurate placement of the final femoral implant.

Select the appropriate size revision housing resection guide and assemble the correct size 5° valgus angle locator | **A IN FIGURE 26**. Valgus angle locators are available in two sizes (size 1/2/3 & size 4/5). Ensure the correct markings on the angle locator are facing "Anterior for Right" or "Anterior for Left." If distal augment resections were performed previously, attach the appropriate distal augment trials to the backside of the housing resection guide. Place the assembled instrument over the fixed IM reamer and flush against the anterior and distal surfaces of the femur | **FIGURE 26**.

Stabilize the housing resection guides with fixation pins into the available bone stock and remove the IM reamer and angle locator leaving only the revision housing resection guide in place | **FIGURE 27**. Using a narrow oscillating or reciprocating saw blade, resect the intercondylar bone superior to inferior along the metal platform | **A IN FIGURE 27**. An optional dual fulcrum attachment is available to stabilize the narrow saw blade. Complete the notch resection by using a saw blade along the sides of the guide.

FIGURE 28

4 |

TRIAL REDUCTION/IMPLANT INSERTION

Assemble the appropriate size trial posterior and distal augments and trial stem extension to the trial femoral component | **FIGURE 28.** Using the femoral holder driver or femoral impactor, impact the trial femoral component onto the prepared bone.

Choose the appropriate size trial insert that matches the trial femoral size. Choose an appropriate thickness of that size and place the trial onto the trial base and complete a trial reduction | **FIGURE 29.**

IMPORTANT NOTE | The standard CCK trial insert is used for both the standard CCK and minus CCK inserts.

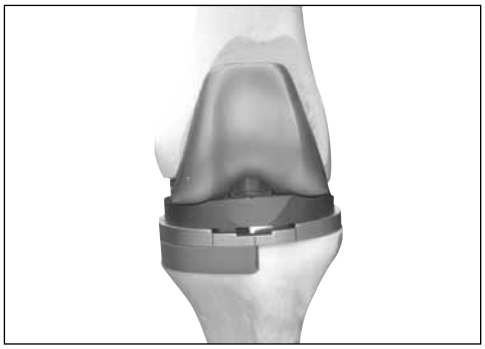

FIGURE 29

An overall assessment of joint stability and range of motion is completed prior to removal of the trial components. Make any necessary soft tissue releases and remove the trial components.

5 |

FINAL COMPONENT ASSEMBLY AND IMPLANTATION

IMPORTANT NOTE | Ensure that the correct size femoral, tibial base, and tibial insert is chosen based on ADVANCE® Revision System component interchangeability. The following chart describes the appropriate final implant combinations.

FEMORAL TRIAL/IMPLANT SIZE	TIBIAL BASE TRIAL SIZE	TIBIAL BASE IMPLANT SIZE	(REVISION ONLY) CCK TIBIAL INSERT SIZE	MP OR PS TIBIAL INSERT SIZE
1	1	1	1 STD	1
1	2/1+	1+	1 STD	1
2	1	1	2 MINUS	NA
2	2/1+	2	2 STD	2
2	3/2+	2+	2 STD	2
3	2/1+	2	3 MINUS	NA
3	3/2+	3	3 STD	3
3	4/3+	3+	3 STD	3
4	3/2+	3	4 MINUS	NA
4	4/3+	4	4 STD	4
4	5/4+	4+	4 STD	4
5	4/3+	4	5 MINUS	NA
5	5/4+	5	5 STD	5
5	6/5+	5+	5 STD	5

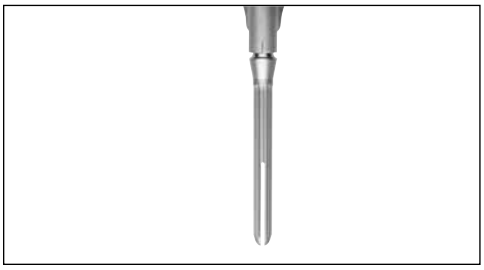

FIGURE 30

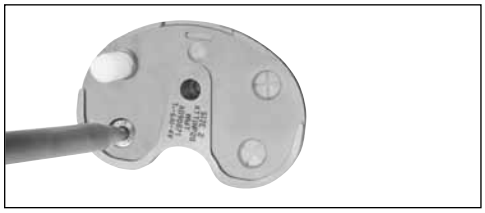

FIGURE 31

FIGURE 32

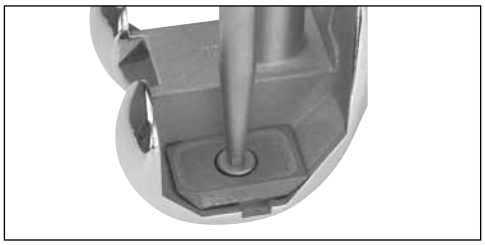

FIGURE 33

FIGURE 34

Assemble the appropriate stem extension implant and tibial block or wedge augment implant with the appropriate size tibial base implant.

IMPORTANT NOTE | Ensure the correct size tibial base augment is matched to the tibial base size. The following chart details the appropriate implant combinations.

TIBIAL BASE IMPLANT SIZE	CORRESPONDING TIBIAL AUGMENT SIZE
1	1
1+	2/1+
2	2/1+
2+	3/2+
3	3/2+
3+	4/3+
4	4/3+
4+	5/4+
5	5/4+
5+	6/5+
6	6/5+

The stem extension is connected to the tibial base and impacted with three to four strong blows of the mallet, ensuring the base is placed on a rigid surface during assembly. A marking on the anterior portion of the tibial base provides a reference to align the slot of the tibial stem extension when a canal filling stem is indicated | **FIGURE 30.** Tibial block or wedge augments are attached by aligning the 3 centering pegs on the tibial augment with the 3 recessed areas of the tibial base. Using the packaged screws, assemble the augments through the tibial base implant. Plastic starter handles are provided with each augment screw and should be removed once the screw is tightened.

A final tightening of the augment should be completed with a standard 3.5mm hexhead screwdriver | **FIGURE 31.** The assembled tibial implant is now placed onto the tibia and seated with the tibial impactor | **FIGURE 32.**

Assemble the appropriate stem extension and distal (assemble distal augment first) and posterior femoral augment with the femoral implant. The femoral stem extension is assembled in the same manner as the tibial stem and a marking on the femoral implant is used to align the slot of the stem extension | **FIGURE 30.** Femoral augments are assembled to the femoral implant using the single screw provided with each augment. Following removal of the plastic starter handle, final tightening is completed with a standard 3.5mm hexhead screw driver | **FIGURE 33.** The assembled femoral implant is now placed onto the femur and seated with the femoral impactor or femoral holder driver | **FIGURE 34.**

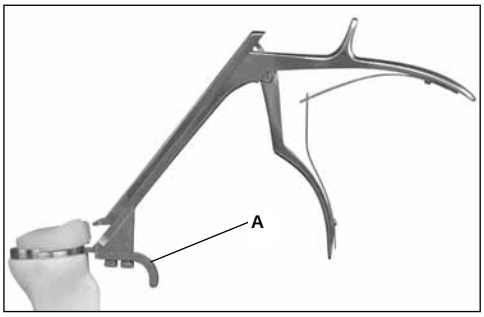

FIGURE 35

FIGURE 36

FIGURE 37

FIGURE 38

A final assessment of joint stability and insert thickness is confirmed with the trial insert. A trial insert pin is available to secure the trial insert to the final tibial base implant for trialing purposes. The final insert is now assembled to the tibial base implant. Push the insert as far posterior as possible with hand pressure. Two options for final seating of the insert are available. An insert assembly tool can be utilized by placing the lower jaw in the anterior cavity of the tibial implant **| FIGURE 35.**

With the bottom jaw in place, slide the locking shim completely forward to assure proper gun position **A IN | FIGURE 35.** To lock the insert, squeeze the handle until the top jaw pushes the insert all the way posterior and down flush against the surface of the tibial base **| FIGURE 36.**

An inserter impactor is also available to assemble the insert to the tibial base. The insert impactor end is placed in the recessed pocket on the anterior face of the tibial insert. To properly position the impactor, place the impactor at a 45° angle relative to the tibial base **| FIGURE 37.** Using several strong mallet blows, impact the insert until the polyethylene face is flush against the surface of the tibial base **| FIGURE 36.**

Final locking of the constrained insert (CCK) is completed with a secondary locking screw through the tibial insert spine. Place the locking screw through the hole of the insert and tap the pin downward until the screw rests against the tibial base. This will engage the locking pin with the tibial base. Final tightening of the locking screw is completed by turning the 3.5mm hexhead screwdriver clockwise while continuing to apply a downward pressure **| FIGURE 38.** Final tightening is confirmed when the locking screw will no longer turn. A final assessment of joint motion and stability is performed and routine wound closure is completed.

ADVANCE®
revision knee **SYSTEM** **APPENDIX A**

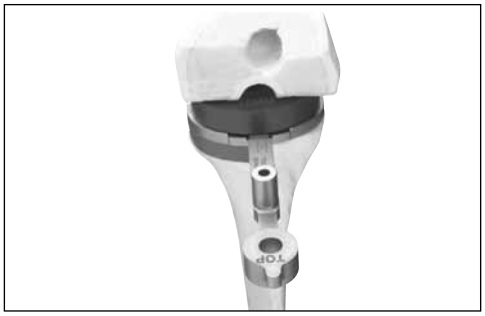

FIGURE 39

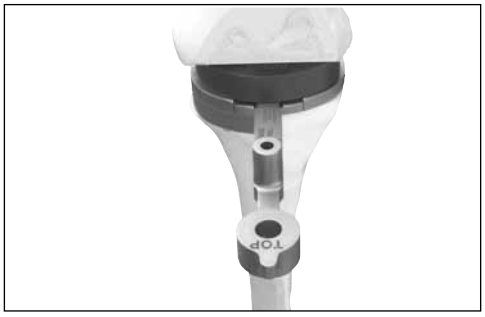

FIGURE 40

FLEXION-EXTENSION GAP MEASUREMENT AND JOINT LINE POSITIONING

Prior to femoral resections, the flexion-extension blocks can be used to evaluate the flexion-extension gap measurements. If necessary, make a clean-up resection along the tibia and place the appropriate size trial base and tibial augment trials on the resected tibia. Assemble the 10mm spacer block on the trial tibial base and place the assembly between the posterior femoral condyles and tibial surface | **FIGURE 39.** Use progressively thicker spacer blocks until the appropriate tension is obtained in flexion.

After the flexion gap has been determined, place the leg in extension and slide the final spacer block assembly between the distal femoral condyles and tibial surface | **FIGURE 40.** If the leg will not fully extend, use progressively smaller spacer blocks until the knee reaches full extension. The difference between the flexion-extension gap can be addressed with several methods. For example, if a 16mm spacer block was used in flexion, and a 12mm in extension, the 4mm discrepancy can be addressed through up sizing the femur and placing 5mm posterior femoral augments. If a larger extension gap exists, the discrepancy can be addressed by augmenting the distal femur.

ADVANCE®
stemmed medial pivot **SYSTEM**

APPENDIX B

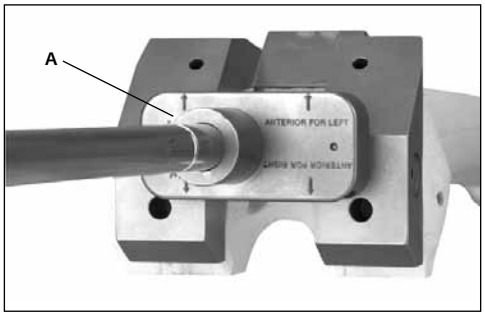

FIGURE 41

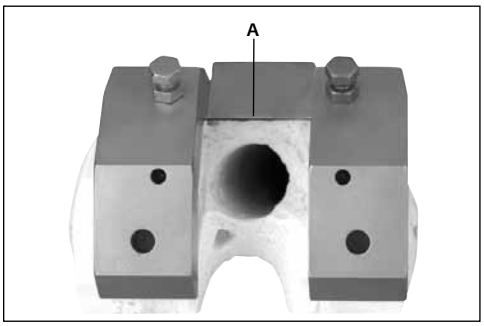

FIGURE 42

STEMMED MEDIAL PIVOT TROCHLEAR GROOVE RESECTION

At this time, it is necessary to perform the final femoral resection of the trochlear groove. Two styles of sulcus resection guides are available: standard blade and power burr. Both should be placed on the femur using fixation pins and/or handles.

Select the appropriate size sulcus resection guide and assemble the correct size 5° valgus angle locator | **A IN FIGURE 41**. Valgus angle locators are available in two sizes (size 1/2/3 & size 4/5). Ensure the correct markings on the angle locator are facing "Anterior for Right" or "Anterior for Left". If distal augment resections were performed previously, attach the appropriate distal augment trials to the backside of the sulcus resection guide. Place the assembled instrument over the fixed IM reamer and flush against the anterior and distal surfaces of the femur | **FIGURE 41**.

Stabilize the sulcus resection guide with fixation pins into the available bone stock and remove the IM reamer and angle locator leaving only the revision housing guide in place | **FIGURE 42**. The trochlear groove should be resected by using a 1/2 inch saw blade on the angled surface. An optional dual fulcrum attachment is available to stabilize the narrow saw blade. Complete the notch resection by using a saw blade along the sides of the guide.

Reference

1. Wright Medical Technology Engineering Report, ER02-0009.

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MK420-701
Rev.05.10