

# U2 MB™ Knee

Mobile Bearing Total Knee System



U2 Knee AiO  
Surgical Technique Guide

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# Device Description

The Mobile Bearing rotating platform knee prosthesis provides both low contact pressure on the articular surface and low shear force on the bone-implant interface.

The U2 MB Knee is compatible with both U2 fixed bearing Posterior Stabilized (PS) and Cruciate Retaining (CR) femoral components.

## **MBC**, Mobile Bearing Congruent Insert

- For use with the CR femoral component
- PCL can be either retained or sacrificed
- Central stopping mechanism designed to enhance Medial/Lateral (M/L) stability and also allows up to 4.5° hyper-extension

## **MB**, Mobile Bearing Insert

- For use with the PS femoral component
- Both ACL and PCL sacrificed

**Cemented MBA** baseplate with stem and augment options include instruments to allow adequate management of minor or moderate tibial defects with the use of augments and the extension stem.

**MBA baseplate TPS PLUS** with stem option include instruments to allow further stability with the use of the extension stem.

## **INDICATIONS**

### **( MBC / MB / MBA )**

The device is indicated for use in total knee arthroplasty in skeletally mature patients with the following conditions:

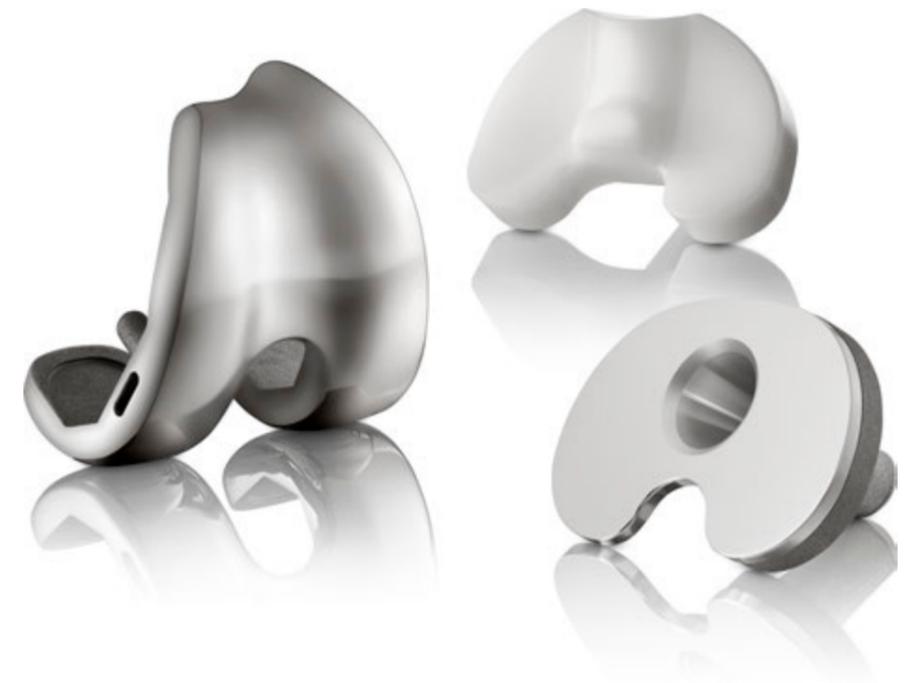
1. Rheumatoid arthritis, osteoarthritis, traumatic arthritis, polyarthritis.
2. Collagen disorders, and/or avascular necrosis of the femoral condyle.
3. Post-traumatic loss of joint configuration, particularly when there is patellofemoral erosion, dysfunction or prior patellectomy.
4. Moderate valgus, varus, or flexion deformities.
5. The salvage of previously failed surgical attempts or for a knee in which satisfactory stability in flexion cannot be obtained at the time of surgery.

This device is a single use implant and intended for cemented use only.

### **( MBATPS PLUS )**

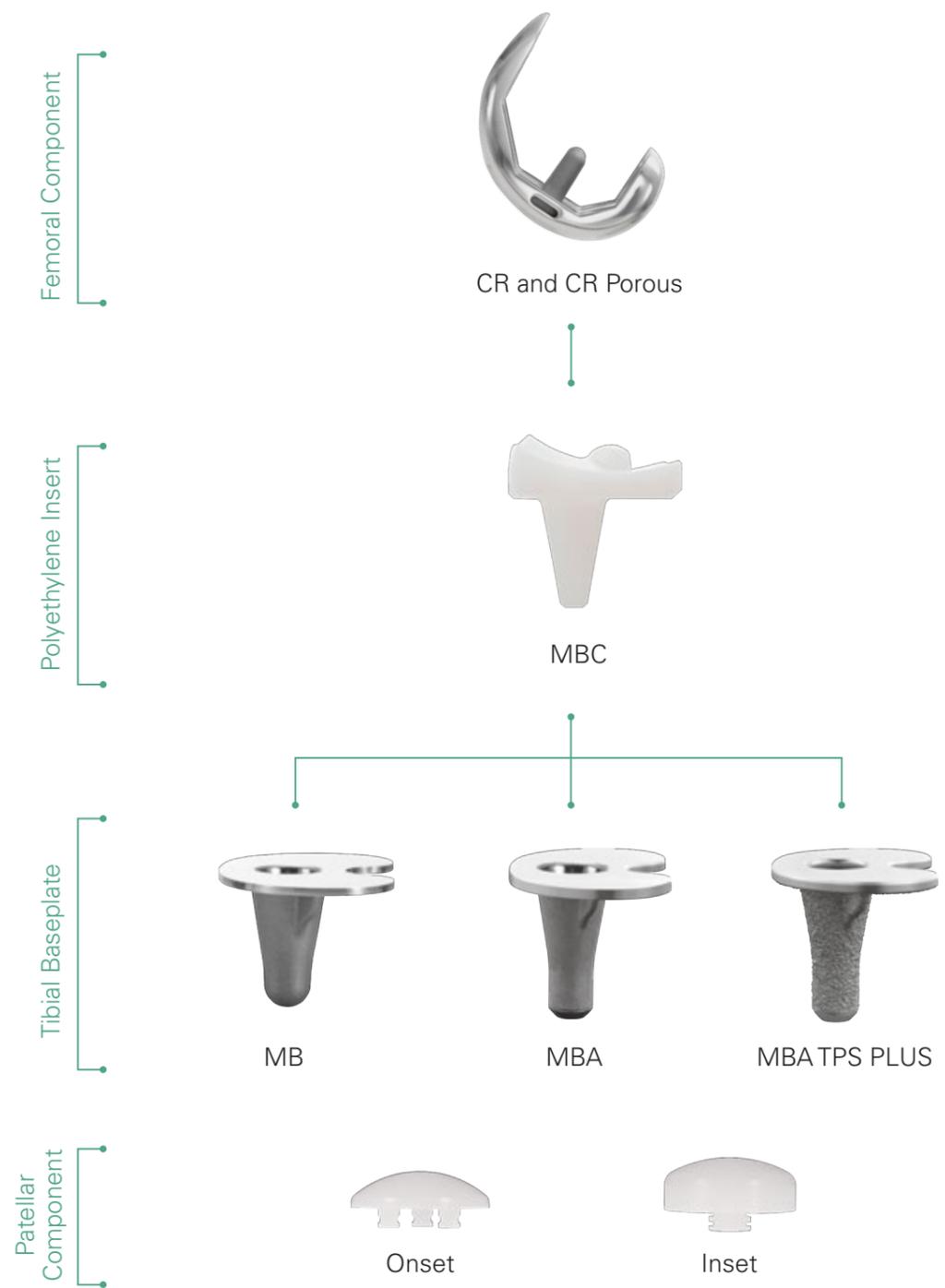
U2 Total Knee System - Cementless Type is indicated in knee arthroplasty for reduction or relief of pain and/or improved knee function in skeletally mature patients with severe knee pain and disability due to rheumatoid arthritis, osteoarthritis, primary and secondary traumatic arthritis, polyarthritis, collagen disorders, avascular necrosis of the femoral condyle or pseudogout, posttraumatic loss of joint configuration, particularly when there is patellofemoral erosion, dysfunction or prior patellectomy, moderate valgus, varus, or flexion contraction. This device may also be indicated in the salvage or previously failed surgical attempts or for knee in which satisfactory stability in flexion cannot be obtained at the time of surgery. This device system is designed for cementless use.

*Please refer to the package inserts for important product information, including, but not limited to contraindications, warnings, precautions, and adverse effects.*

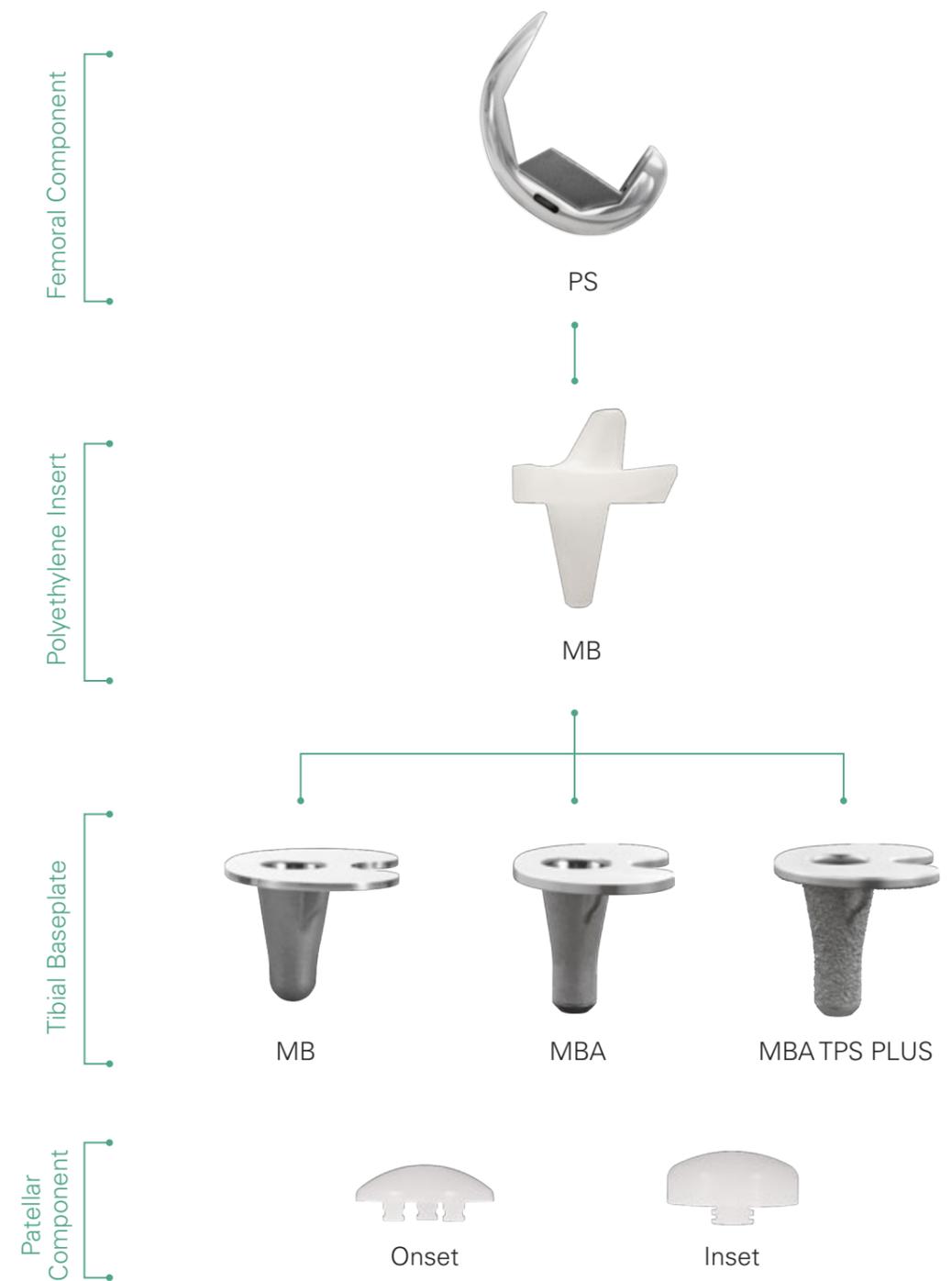


# U2 MB Knee System Overview

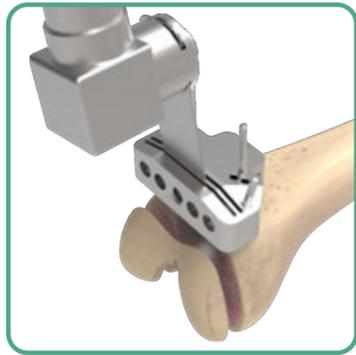
## Cruciate Retaining (CR)



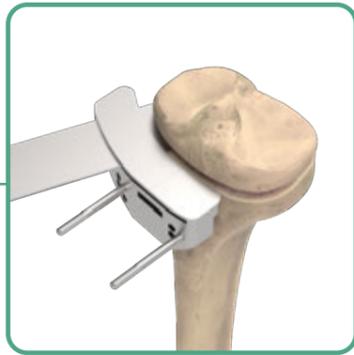
## Posterior Stabilized (PS)



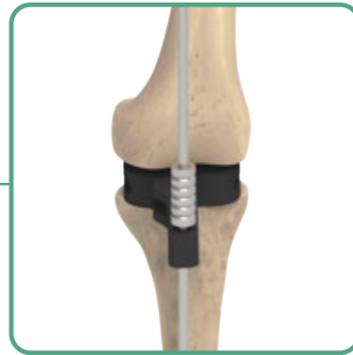
# Surgical Overview



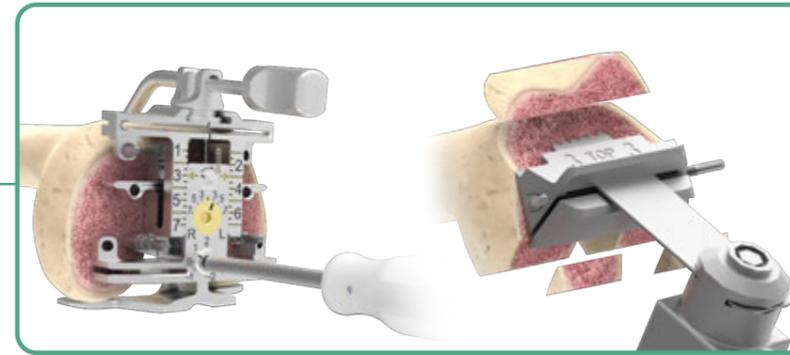
**A. Distal Femoral Resection**



**B. Proximal Tibial Resection**



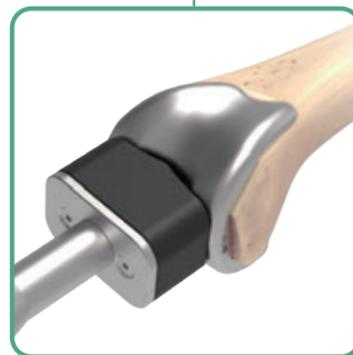
**C. Extension Gap Assessment**



**D. Femoral Sizing and Chamfer Resection**



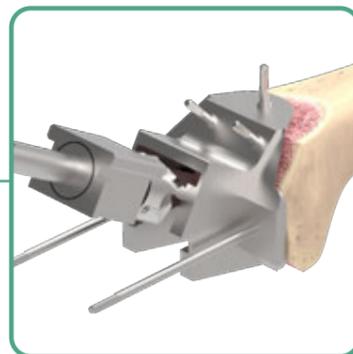
**E. Extension and Flexion Gaps Confirmation**



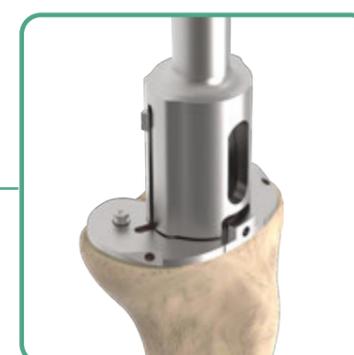
**F. Femoral Trial Reduction**



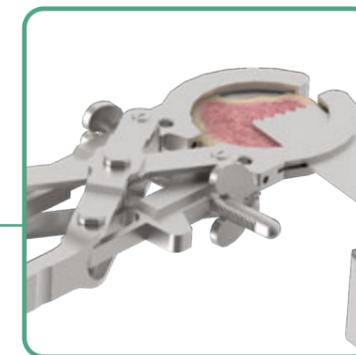
**G. CR Pegs Preparation**



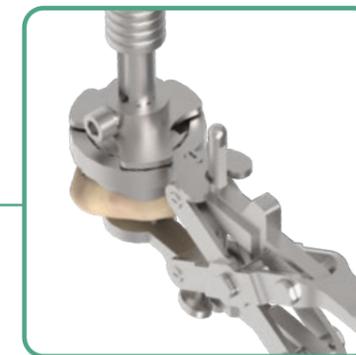
**H. PS Box Preparation**



**I. Proximal Tibial Preparation**



**J. Onset Patellar Preparation**



**K. Inset Patellar Preparation**



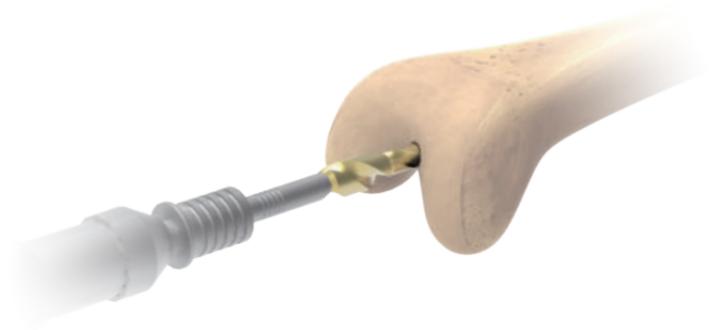
**L. Implantation**

# A. Distal Femoral Resection

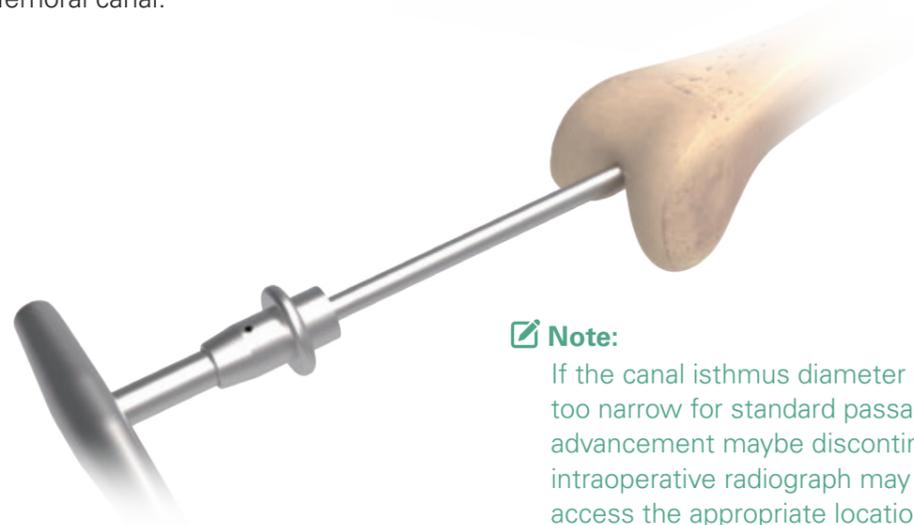
## Access Canal

With the ACL removed, the location of the typical femoral entry hole is deemed to be slightly medial to the center of the intercondylar notch, and approximately 5 to 7 mm anterior to the insertion of the PCL.

Use the **Step Drill** to create an opening into the femoral canal. This allows for depressurization of the canal when the **Femoral IM Rod** is inserted.

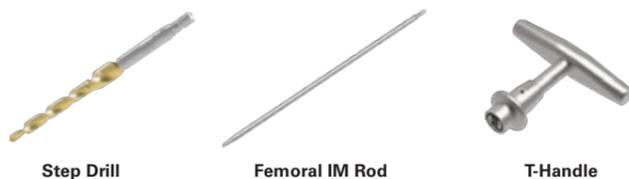


Assemble the **Femoral IM Rod** and **T-Handle**, and manually insert past the isthmus of the femoral canal.



**Note:**  
If the canal isthmus diameter is thought to be too narrow for standard passage of the rod, advancement maybe discontinued, and an intraoperative radiograph may be employed to access the appropriate location of the rod.

**Instruments**



Step Drill

Femoral IM Rod

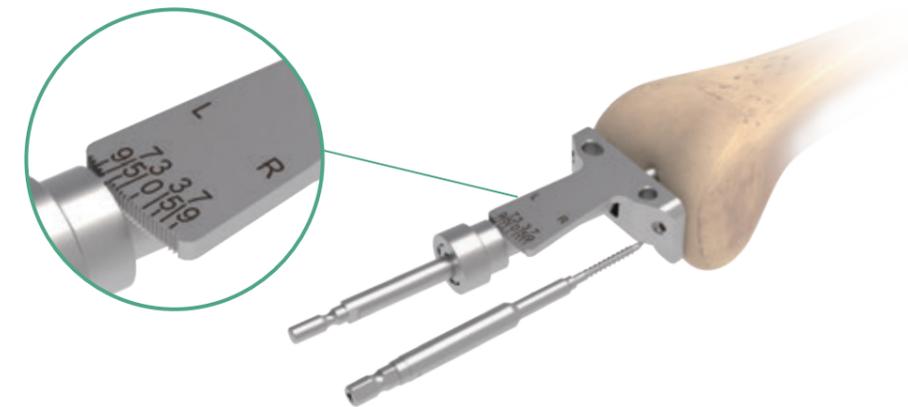
T-Handle

# A. Distal Femoral Resection

## Set Femoral Valgus Angle

Remove the **T-Handle** and slip the **Femoral IM Alignment Guide** through the **Femoral IM Rod**. Use the **Femoral IM Alignment Guide** to set the angle of the distal femoral resection for either a Left or Right Knee. The guide allows up to 11° of valgus angle adjustment. The ideal angle should be determined according to pre-operative planning.

When the alignment guide is properly engaged with the distal femur, use a **Threaded Pin** to secure the assemblies.

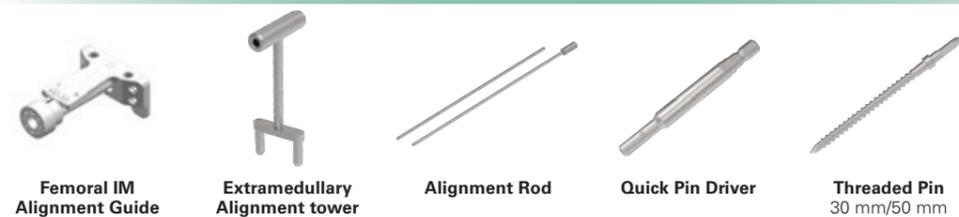


Assemble both **Alignment Rod** and the **Extramedullary Alignment Tower** to the **Femoral IM Alignment Guide**.

The **Alignment Rod** can now be used to determine the proper mechanical axis.



**Instruments**



Femoral IM Alignment Guide

Extramedullary Alignment tower

Alignment Rod

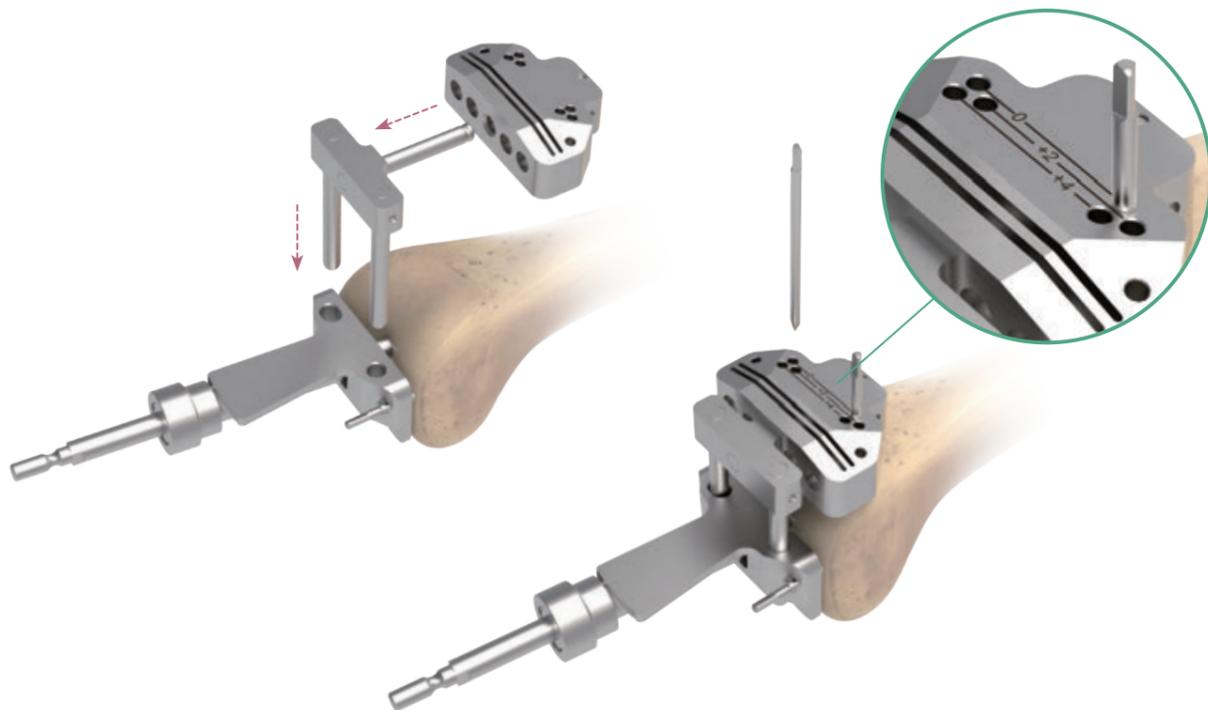
Quick Pin Driver

Threaded Pin 30 mm/50 mm

# A. Distal Femoral Resection

## Distal Femoral Resection

Attach the **Distal Femoral Cutting Guide** to the **Distal Femoral Alignment Guide**. Drill pilot holes through the "0" pin holes on the anterior surface of the **Distal Femoral Cutting Guide** and insert a pair of **Round Pins** to secure the Cutting guide.



**Note:**

The U2 Knee technique is designed for a standard 9 mm distal femoral resection when the **Distal Femoral Cutting Guide** is set to the "0" pin hole position. The femoral component has a 9 mm distal femoral implant thickness.

If a different distal femoral resection level is required:  
The +2 mm or -2 mm holes may be utilized by shifting the **Distal Femoral Cutting Guide**. Alternatively, the +3 mm cutting slot may be used.

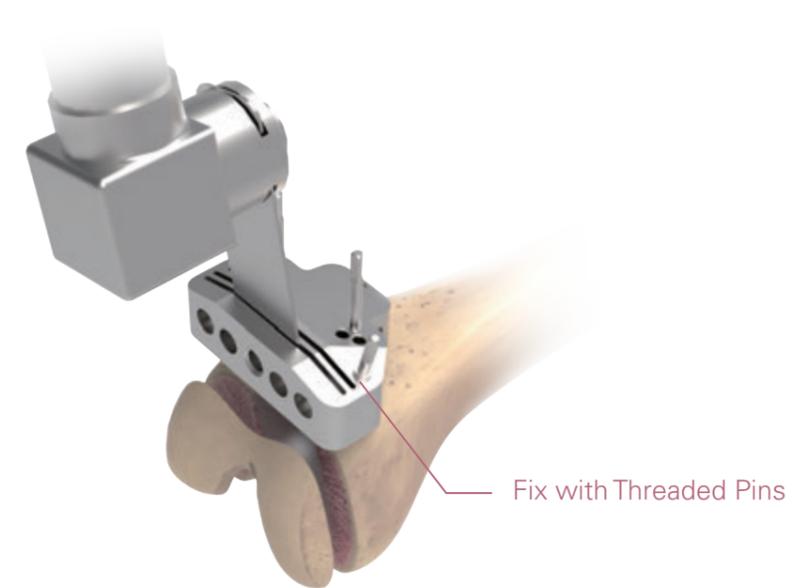
**Instruments**



# A. Distal Femoral Resection

Before performing the distal femur resection, additional **Threaded Pins** may be placed to further secure the resection guide. Then, use a standard .050" (1.27 mm) saw blade through the cutting slot to resect the distal femur.

Optional tip for +1/-1 mm bone resection:  
The +3 mm cutting slot may be utilized by combining and shifting the **Distal Femoral Cutting Guide** to the adjacent +2 mm or -2 mm holes to create +1- or -1 mm bone resection.  
For example: use the +2 mm holes for initial fixation, then shift the **Distal Femoral Cutting Guide** to the 0 mm holes and use +3 mm cutting slot to allow an +1 mm bone cut (bone cut from standard 9 mm to become 10 mm)



**Instruments**



# B. Proximal Tibial Resection

There are two options for preparing tibial platforms. One is the intramedullary alignment method, and the other is the extramedullary alignment.

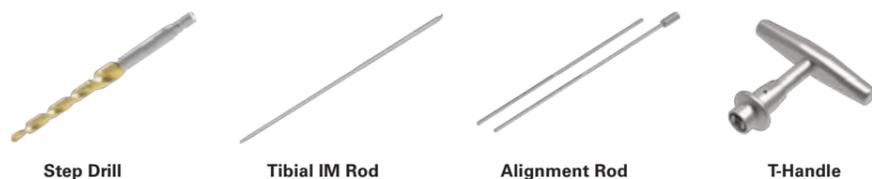
## Tibial Intramedullary Alignment Method Access Canal

Flex the knee joint to the maximum angle and expose the whole tibial plateau by moving it anteriorly. Use the **Step Drill** to create an opening into the tibial canal. The drill is inserted to a depth of approximately 100 mm into the tibial canal.

After taking out the drill, it is recommended to apply an **Alignment Rod** into the marrow cavity several times to reduce the risk of fat embolism. Connect the **T-Handle** to the **Tibial IM Rod** and insert the assembly manually into tibial canal through the narrowest point inside. Then, remove the **T-Handle**. If it is difficult to insert or align the **Tibial IM Rod**, enlarge the pilot hole with the **Step Drill** again.



Instruments



# B. Proximal Tibial Resection

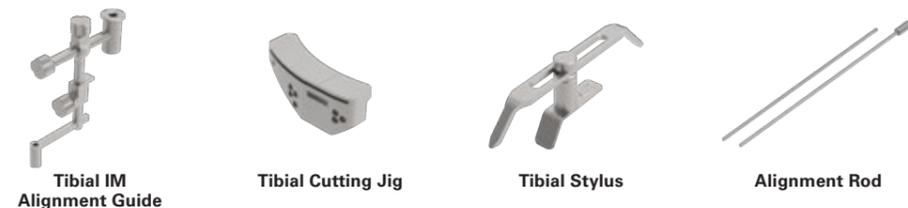
## Tibial Cutting Jig Positioning and Tibial Resection

Position the **Tibial Cutting Jig** onto the **Tibial IM Alignment Guide**.

With the thumb screw held loosely, the **Tibial Stylus** may be used to establish the appropriate height position of the **Tibial Cutting Jig**.



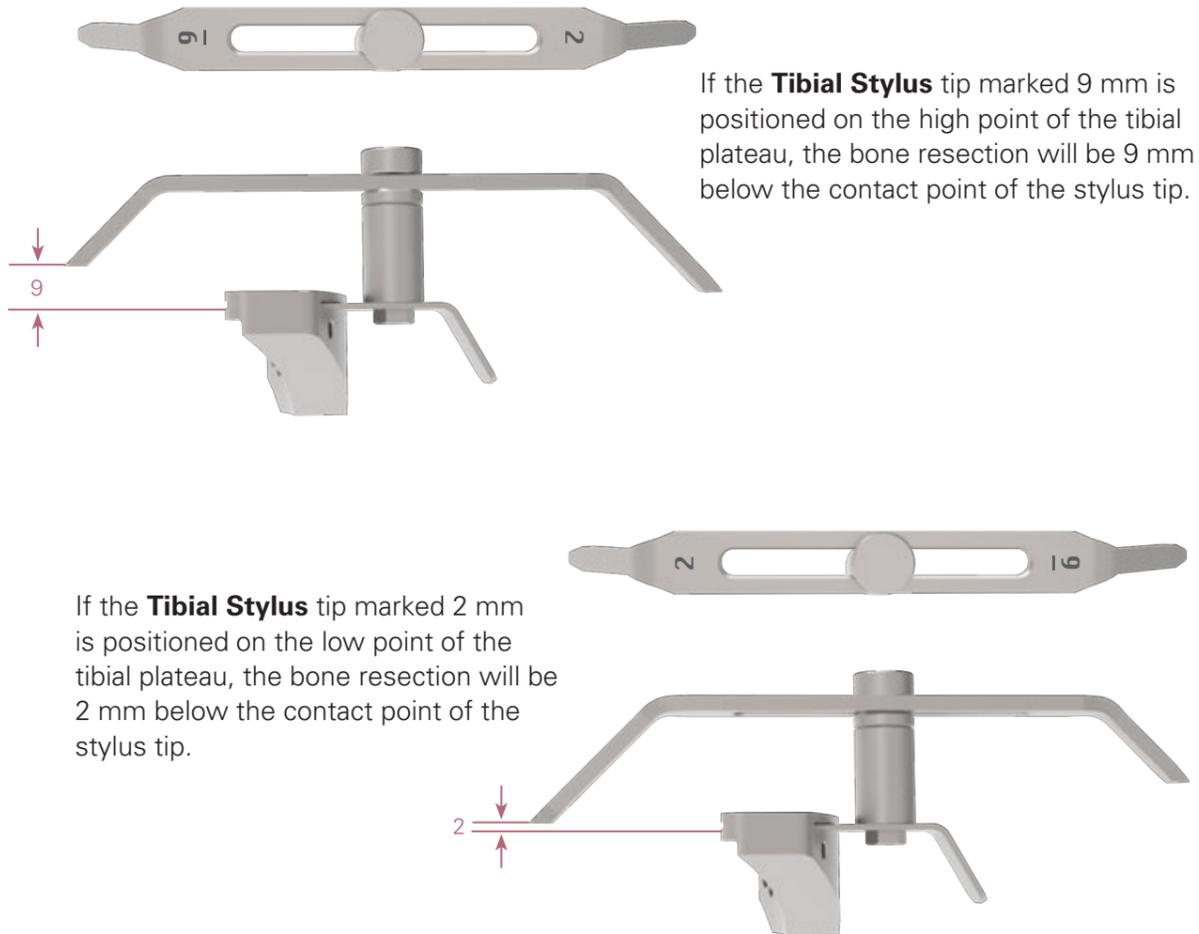
Instruments



# B. Proximal Tibial Resection

To determine the desired tibial resection level, insert the **Tibial Stylus** into the cutting slot and position the tip of the stylus onto the appropriate location on the tibial plateau.

The **Tibial Stylus** allows two options to position the cutting guide at either 2 mm or 9 mm resection levels.



If the **Tibial Stylus** tip marked 9 mm is positioned on the high point of the tibial plateau, the bone resection will be 9 mm below the contact point of the stylus tip.

If the **Tibial Stylus** tip marked 2 mm is positioned on the low point of the tibial plateau, the bone resection will be 2 mm below the contact point of the stylus tip.

Instruments



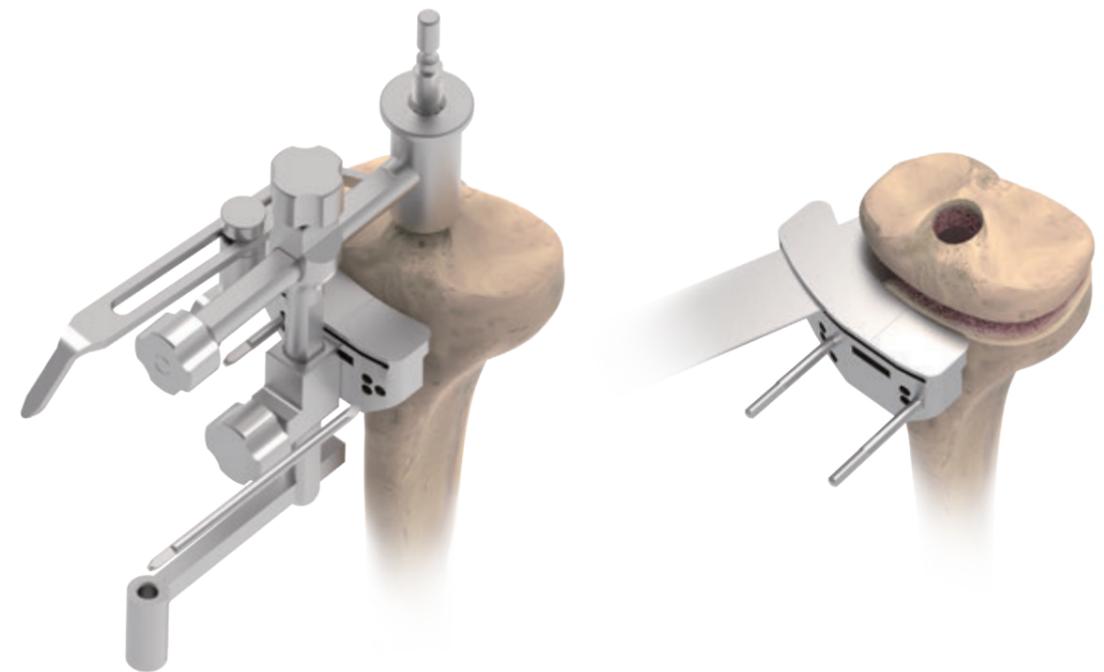
Tibial Stylus

# B. Proximal Tibial Resection

With the **Tibial Cutting Jig** in the correct position, place two **Round Pins** into the "0" hole locations. Additional **Round Pins** may be used in the peripheral holes provided for additional stability.

With the **Tibial Cutting Jig** secured, re-assemble the **T-Handle** onto the **Tibial IM Rod** then remove the **Tibial IM Rod** and **Tibial IM Alignment Guide** leaving the **Tibial Cutting Jig** in position.

The proximal tibial resection may be performed utilizing a 1.27 mm saw blade. Once completed, the **Tibial Cutting Jig** and drills may be removed for subsequent trial reduction.



**Note:** Prior to resection, if the surgeon wishes to increase or decrease the tibial resection thickness, the "+2" or "-2" hole locations may be utilized to re-position the **Tibial Cutting Jig**.

Instruments



Tibial IM Alignment Guide



Tibial Cutting Jig



Tibial Stylus



Round Pin

# B. Proximal Tibial Resection

## Tibial Extramedullary Alignment Method

Attach the selected **Tibial Cutting Jig** to the **Tibial EM Alignment Guide**.

With the knee fully flexed, position the distal portion of the **Tibial EM Alignment Guide** around the ankle joint, proximal to the malleoli. Position the EM Alignment Guide rod is parallel to the anterior of the tibia from the sagittal, i.e. side, position so the proximal tibial resection will be made at 0° slope.

Position the proximal portion of the **Tibial EM Alignment Guide** by impacting the spikes of the **Tibial EM Alignment Guide** into the central portion of the proximal tibial plateau.



Instruments



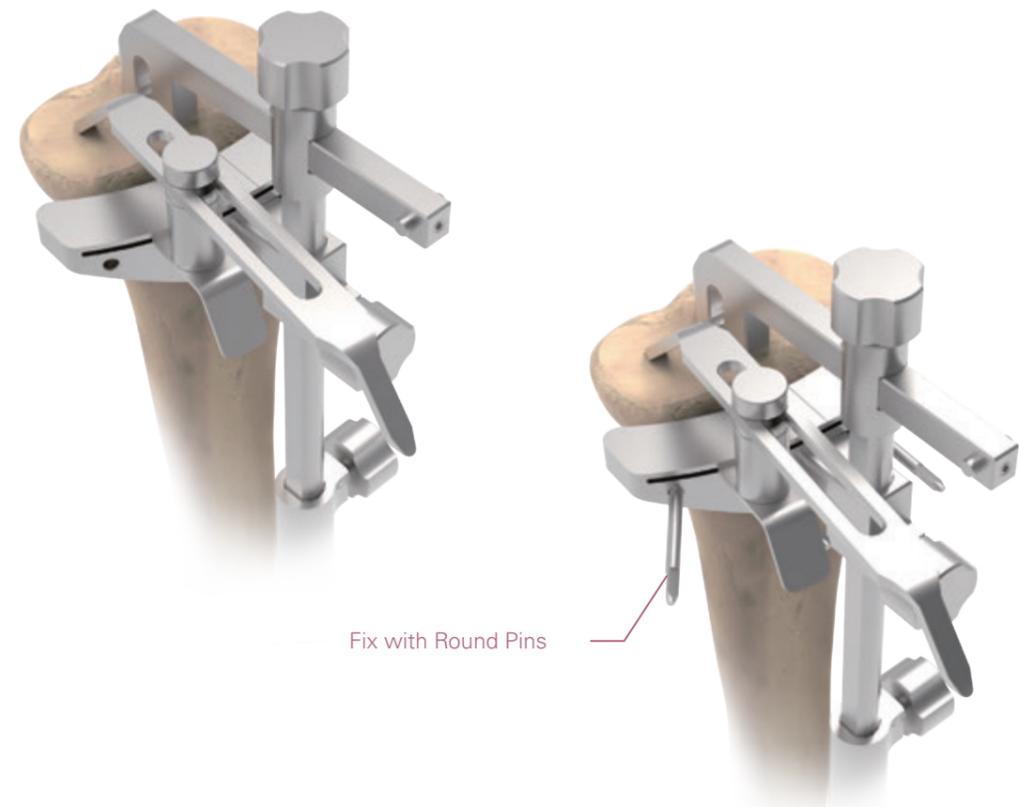
Tibial EM Alignment Guide



Tibial Cutting Jig

# B. Proximal Tibial Resection

The resection thickness may be determined by inserting the **Tibial Stylus** in the resection slot.



Fix with Round Pins

Instruments



Tibial Stylus



Round Pin

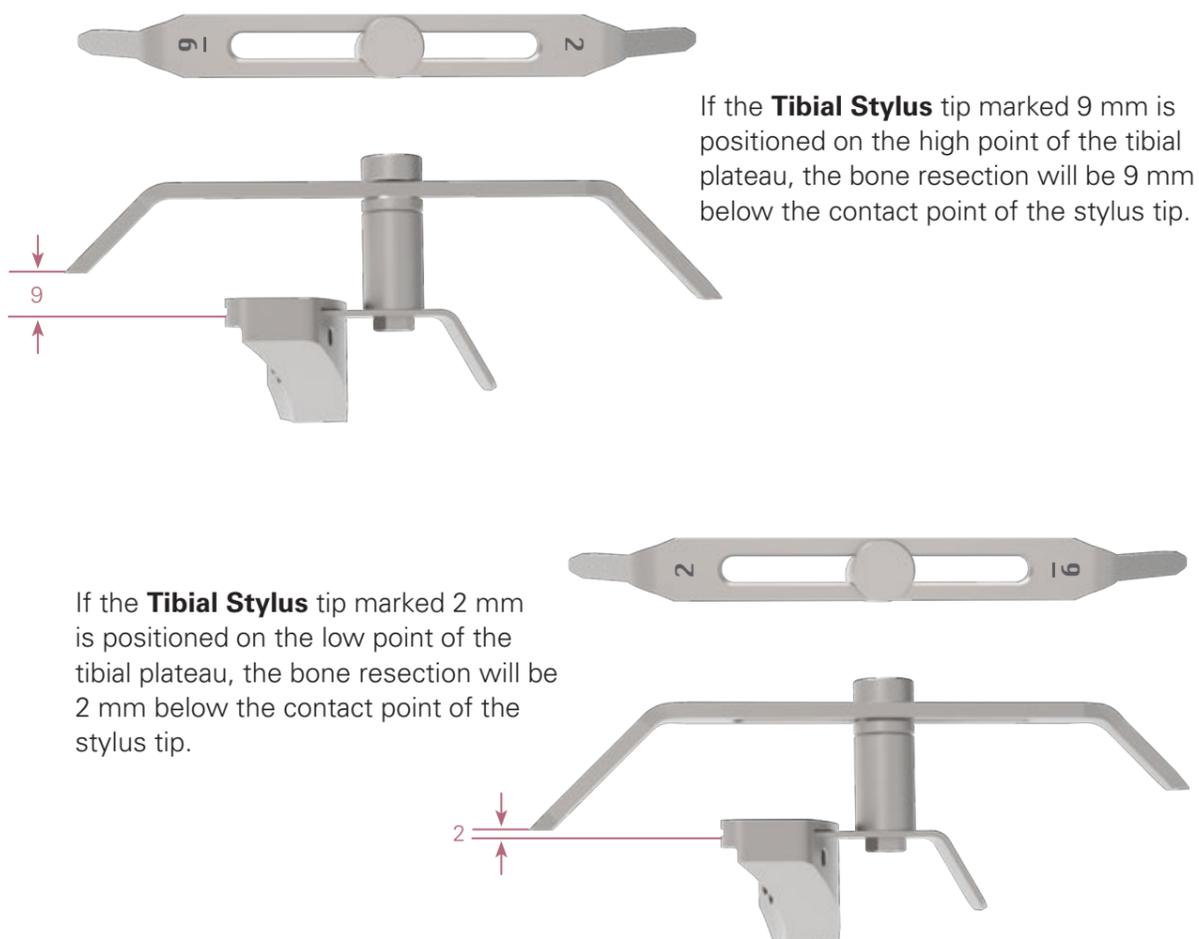


Tibial Cutting Jig

# B. Proximal Tibial Resection

To determine the desired tibial resection level, insert the **Tibial Stylus** into the cutting slot and position the tip of the stylus onto the appropriate location on the tibial plateau.

The **Tibial Stylus** allows two options to position the cutting guide: 2 mm or 9 mm cutting levels.



Instruments



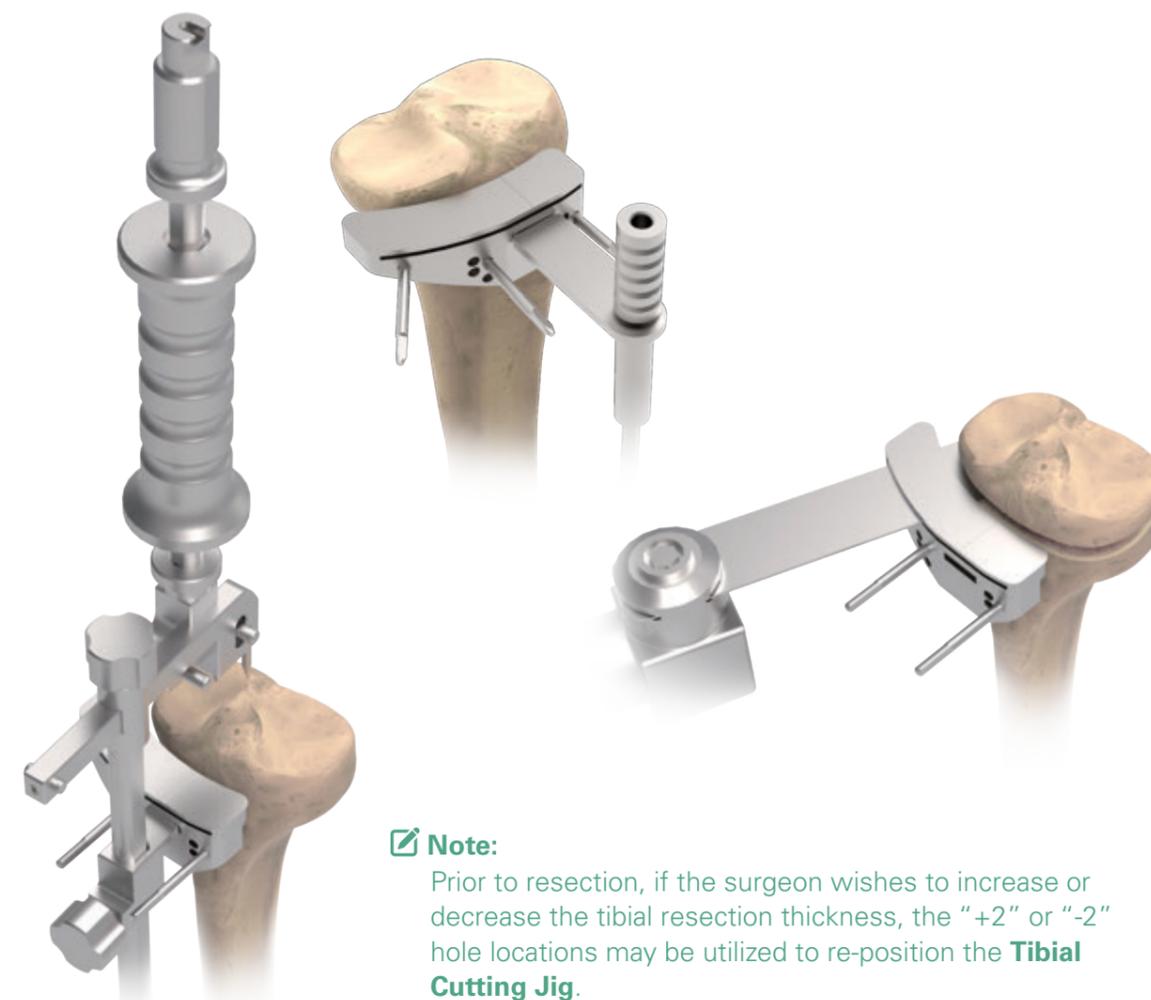
Tibial Stylus

# B. Proximal Tibial Resection

After the **Tibial Cutting Jig** is securely positioned, remove the **Tibial EM Alignment Guide** by utilizing the **Spike and Tibial EM Guide Extractor**.

Use the **EM Alignment Guide** and **Alignment Rod** to recheck the alignment if necessary.

The proximal tibial resection may be performed utilizing a 1.27 mm saw blade. Once completed, the **Tibial Cutting Jig** and drills may be removed for subsequent trial reduction.



Instruments



Tibial EM Alignment Guide



Tibial Cutting Jig



Spike and Tibial EM Guide Extractor



EM Alignment Guide



Alignment Rod

# C. Extension Gap Assessment

Remove any osteophytes, meniscus or other soft tissue as needed to properly complete assessment.

Extend the knee and insert the appropriate end of the **Gap Gauge** to verify the extension gap of the knee. The **Alignment Rod** may be utilized to evaluate bone resection.



Instruments



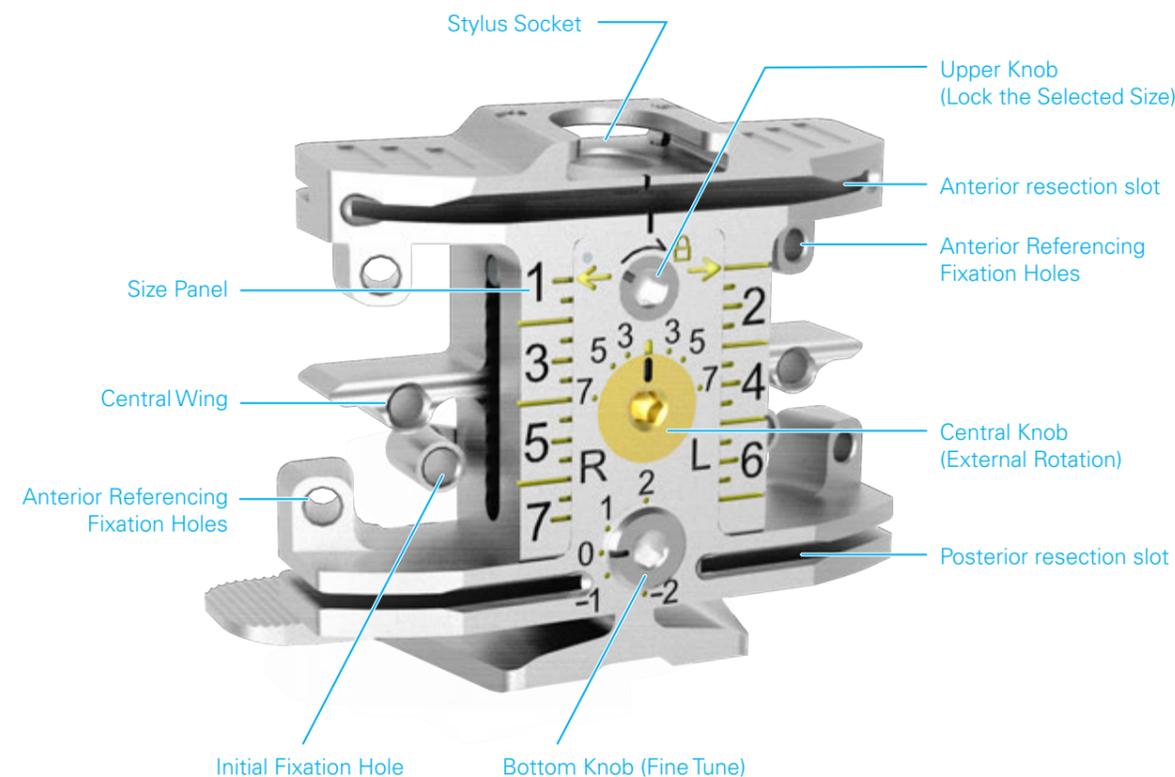
Gap Gauge



Alignment Rod

# D. Femoral Sizing and Chamfer Resection

## U2 Knee AiO™ All-in-One Cutting Block



Instruments

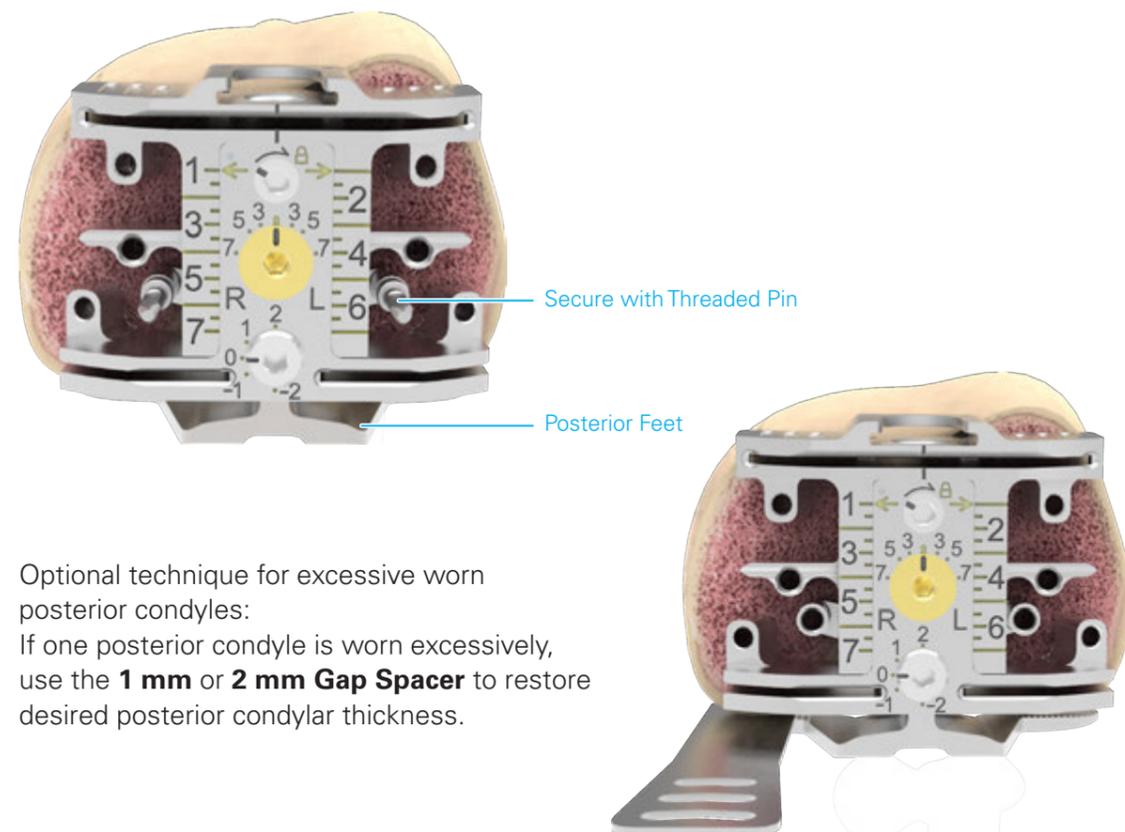


AiO Block

# D. Femoral Sizing and Chamfer Resection

## Placement of the AiO Block

Confirm the bottom knob of the **AiO Block** is set to the zero position. Place the **AiO Block** against the resected distal surface of the femur with the posterior feet of the block seated on the posterior condyles. Secure the **AiO Block** with two 30 mm **Threaded Pins** through the initial fixation holes.



Optional technique for excessive worn posterior condyles:  
If one posterior condyle is worn excessively, use the **1 mm** or **2 mm Gap Spacer** to restore desired posterior condylar thickness.

Instruments



AiO Block



Threaded Pin  
30 mm/50 mm

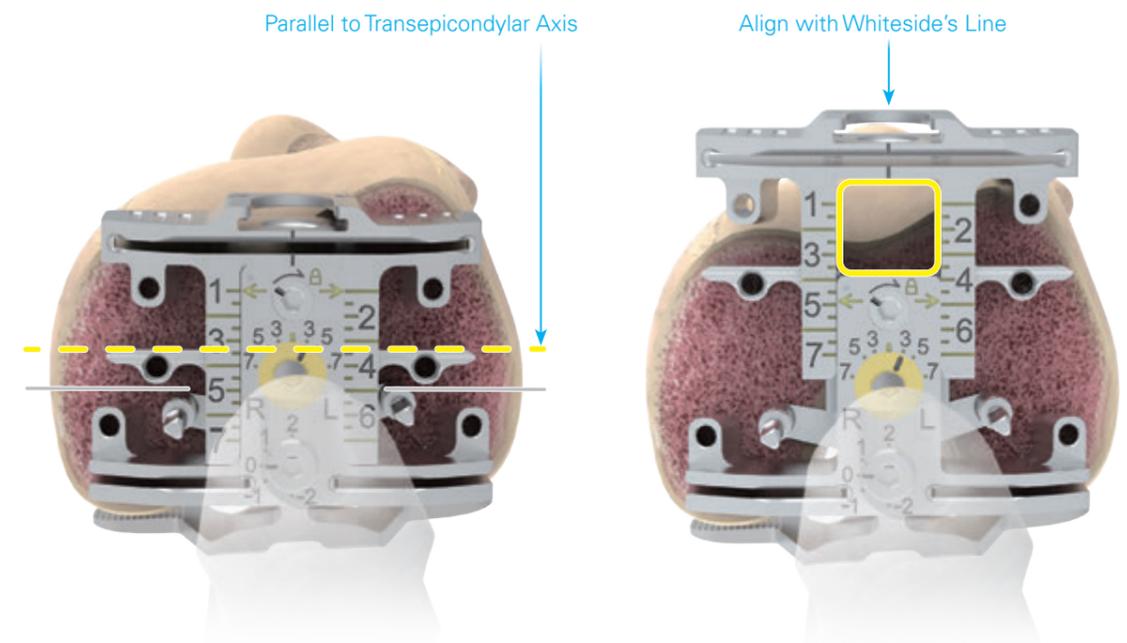


Gap Spacer  
1 mm/2 mm

# D. Femoral Sizing and Chamfer Resection

## Establish the External Rotation

Using **Screwdriver**, adjust the central knob to set the desired femoral component rotation angle referencing the transepicondylar axis and Whiteside's Line. The markings on the central knob indicate the degrees of rotation vs. the posterior condyles and can be adjusted from 3° to 7° in 1° increments.



Instruments



AiO Block

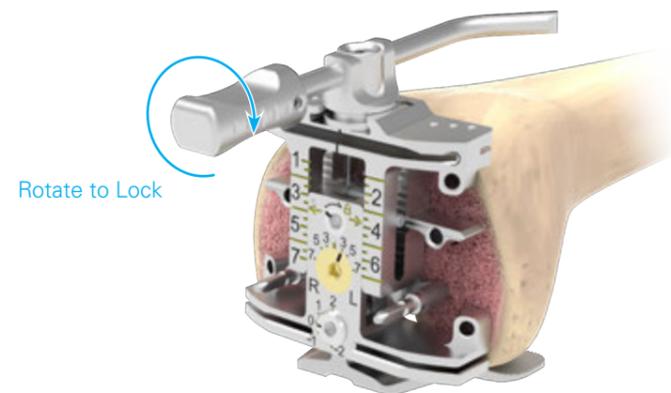


Screwdriver

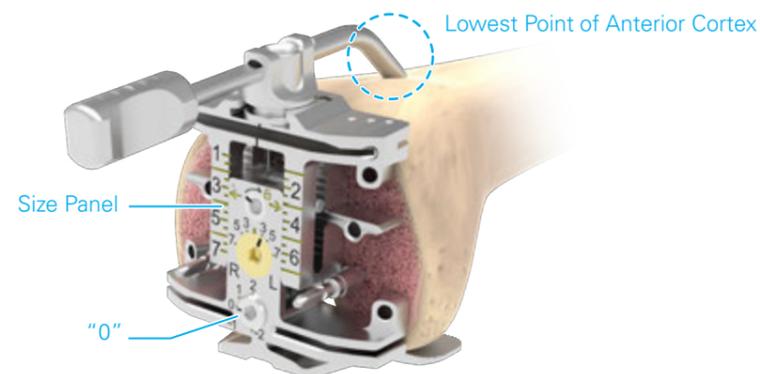
# D. Femoral Sizing and Chamfer Resection

## Sizing the Femur

Rotate the handle of the **Femoral Stylus** to the unlock position. Then insert the stylus into the slot on the top of the **AiO Block**. Rotate the stylus handle back to the locked position.



Position the stylus tip so it is touching the **lowest point** on the anterior femoral cortex. Check the size panel on the front of the **AiO Block**. If the block is positioned to an exact size and is in proper overall position, proceed to performing femoral resections. If the **AiO Block** is not set to an exact size or is not in proper overall position, adjustments can be made using either an anterior referencing or posterior referencing.



Instruments



AiO Block



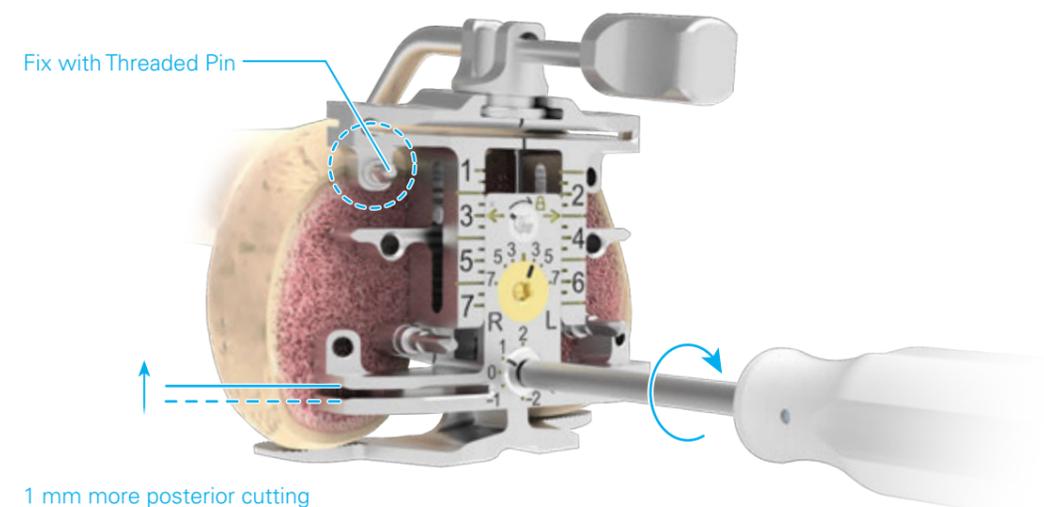
Femoral Stylus

# D. Femoral Sizing and Chamfer Resection

## Determine the Bone Resection Level

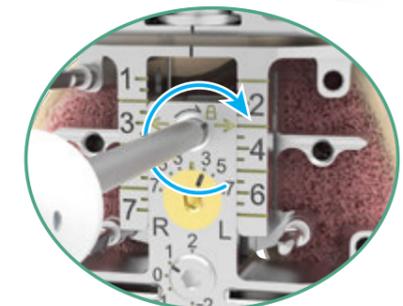
### Anterior Referencing:

Secure the **AiO Block** by inserting a **Threaded Pin** in one or both of the Anterior Referencing Fixation Holes. Use the **Screwdriver** to elevate the Posterior Resection Slot to an appropriate position by adjusting the Bottom Knob to match a chosen size. Note the figures on the Bottom Knob indicate the adjustment of the posterior condylar resection level relative to the standard 9 mm resection.



1 mm more posterior cutting

Once the appropriate size is determined, rotate the **Upper knob** to the lock position with the **Screwdriver** to secure the chosen size.



Instruments



AiO Block



Threaded Pin  
30 mm/50 mm

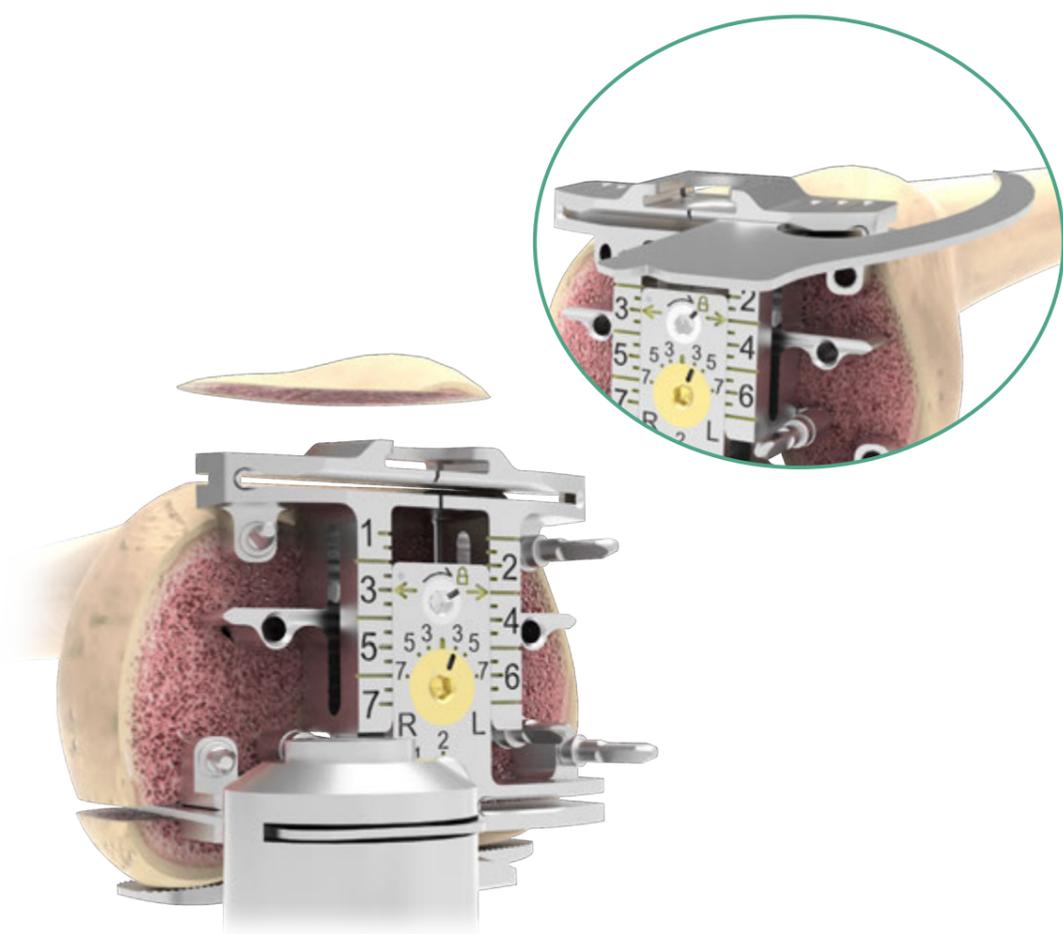


Screwdriver

# D. Femoral Sizing and Chamfer Resection

Remove the **Femoral Stylus**, then secure the anterior and posterior slots with **Threaded Pins** and proceed with the anterior and posterior resection.

If desired, use the **Resection Check Blade** to confirm the resection level before bone resection.



Instruments



AiO Block



Femoral Stylus



Threaded Pin  
30 mm/50 mm



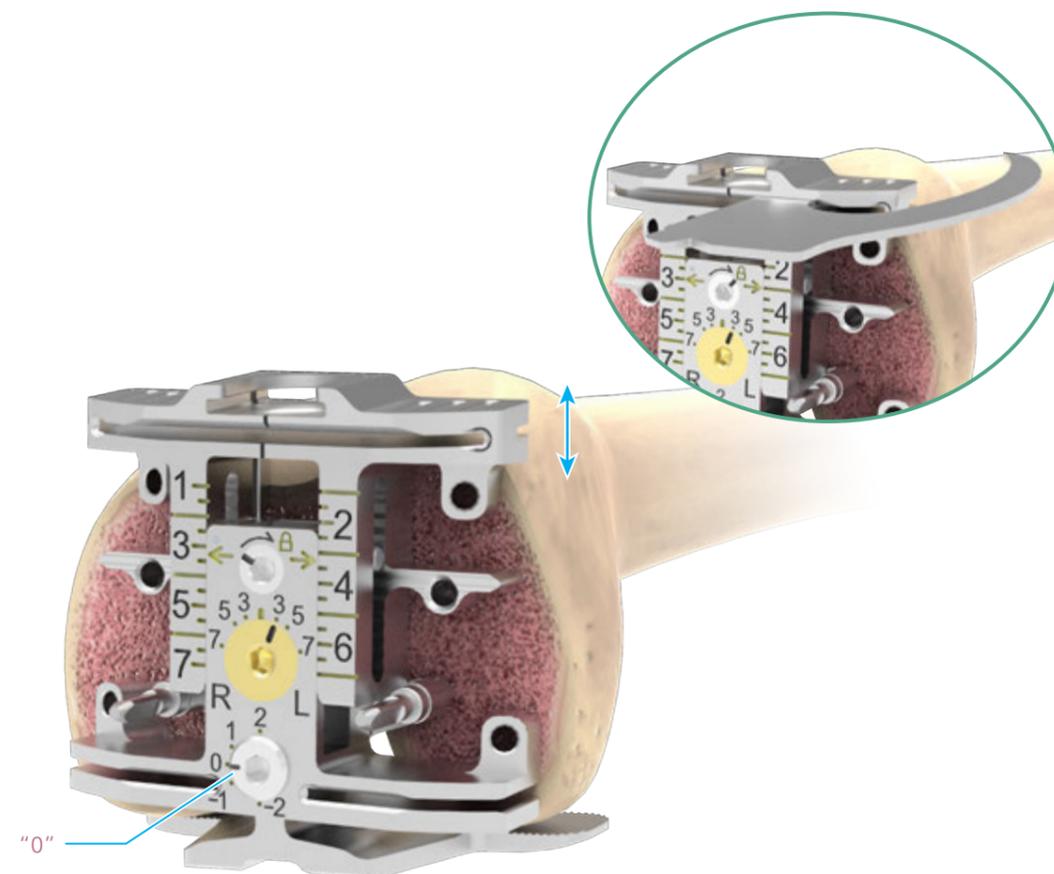
Resection Check Blade

# D. Femoral Sizing and Chamfer Resection

## Posterior Referencing:

Make sure the bottom knob indicates "0", which refers to the 9 mm standard posterior thickness in the prosthesis. Then remove the **Femoral Stylus**. Slide the anterior slot to match a proper size on the size panel.

Always check the resection level with the **Resection Check Blade**.



Instruments



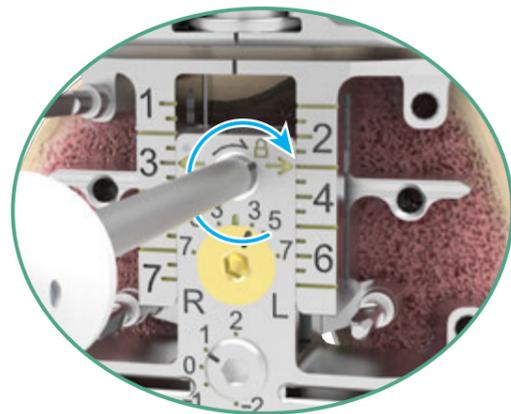
AiO Block



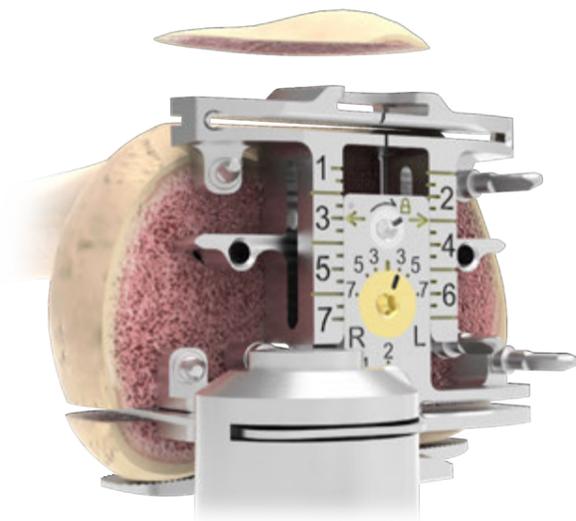
Resection Check Blade

# D. Femoral Sizing and Chamfer Resection

Once the size is determined, rotate the upper knob with the **Screwdriver** to the lock position to secure the chosen size and lock the cutting block.



Fix the anterior and posterior slots with **Threaded Pins** and proceed with the anterior and posterior resection.



Instruments



AiO Block



Screwdriver

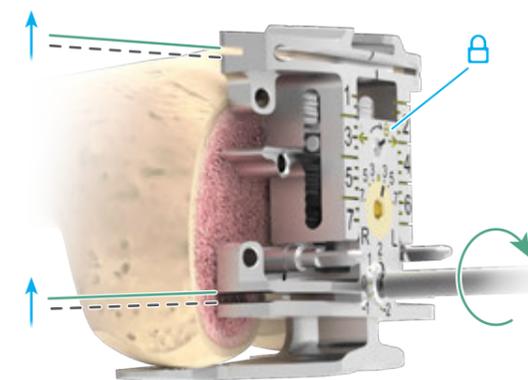


Threaded Pin  
30 mm/50 mm

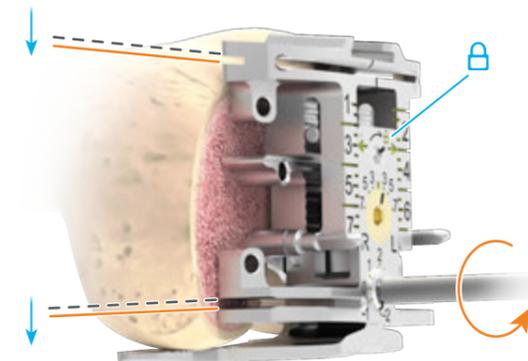
# D. Femoral Sizing and Chamfer Resection

## Fine Tune

Occasionally, even when the proper size is chosen the desired resection level may be unsatisfactory. If this occurs, a slightly redistributed anterior and posterior bone resection may be considered. With the upper knob in the locked position, use the **Screwdriver** to rotate the bottom knob clockwise to allow for less anterior, and more posterior cut; conversely, rotate the bottom knob counterclockwise to make more anterior and a smaller posterior cut. The range of adjustment is between +2 mm and -2 mm to the standard 9 mm posterior cut.



Clockwise Rotation:  
Less Anterior,  
More Posterior Resection



Counterclockwise Rotation:  
More Anterior,  
Less Posterior Resection

Instruments



AiO Block

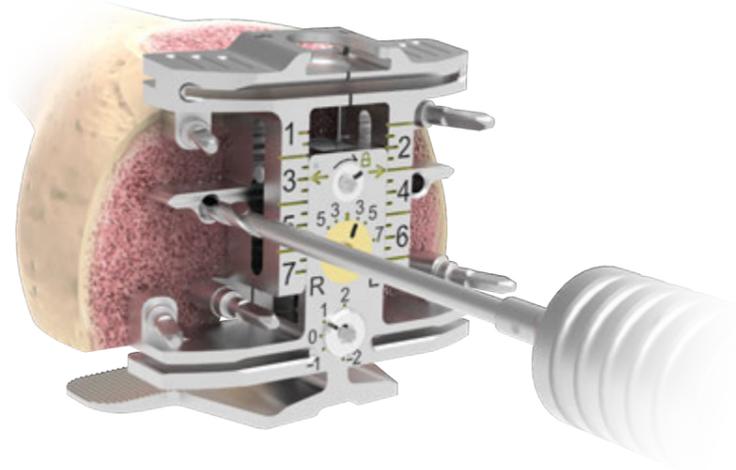


Screwdriver

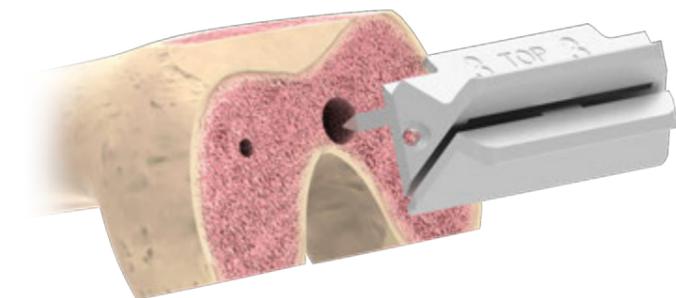
# D. Femoral Sizing and Chamfer Resection

## Chamfer Cut

Use the **3.2 mm Drill** to drill two reference holes for the **Femoral Chamfer Resection Guide** before removing the **AiO Block**.



Place the appropriate size **Femoral Chamfer Resection Guide** into the pre-drilled pin holes.



Instruments



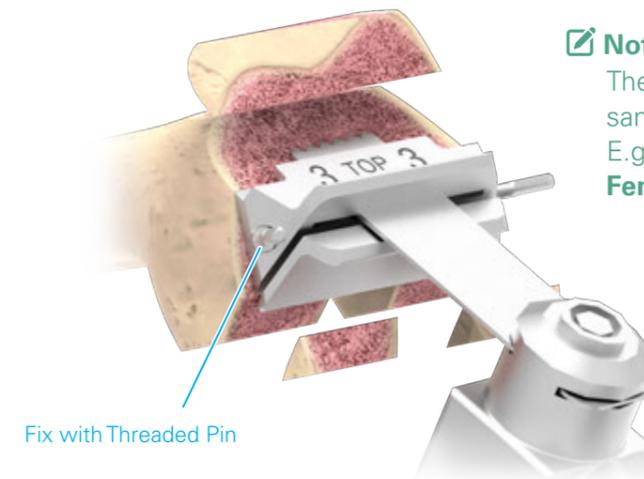
3.2 mm Drill



Femoral Chamfer Resection Guide

# D. Femoral Sizing and Chamfer Resection

Secure the **Femoral Chamfer Resection Guide** with **Threaded Pins** and then complete chamfer cuts.

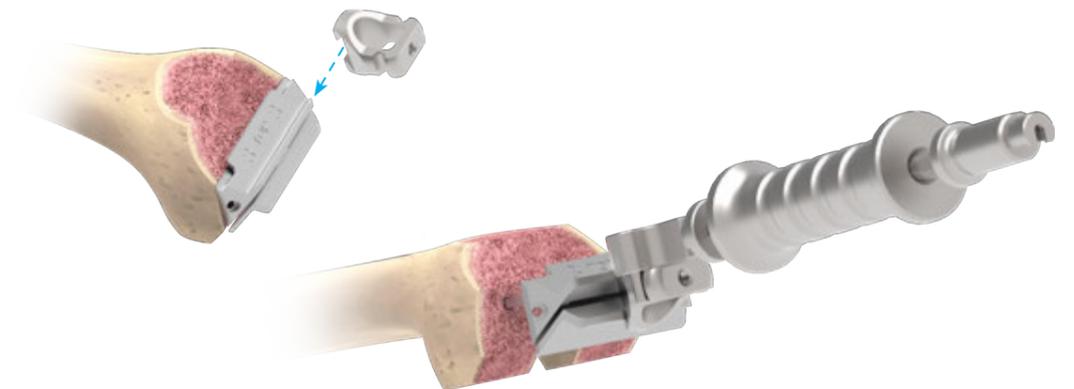


**Note:**  
The intermediate femoral sizes share the same chamfer resection guide to integral size. E.g., Size 3.5 and Size 3 both use Size 3 **Femoral Chamfer Resection Guide**.

Fix with Threaded Pin

**Femoral Chamfer Resection Guide** can be removed by the **Femoral Chamfer Resection Guide Extractor**.

The **Tibial EM Guide Extractor** may further connect to slide out the assemblies together.



Instruments



3.2 mm Drill



Femoral Chamfer Resection Guide



Femoral Chamfer Resection Guide Extractor



Spike and Tibial EM Guide Extractor

# E. Extension and Flexion Gaps Confirmation

The extension and flexion joint gaps may be evaluated with the **Gap Gauge**. Select the 9 mm **Gap Gauge** initially to assess both the extension and flexion joint gaps. If a thicker gap is required, combine additional **Gap Gauge Blocks** with different thicknesses and test again. The range of thickness is from 9 mm to 18 mm. If the assessed femoral and extension gaps are optimal, insert the femoral and tibial trials to test overall knee mobility and their relative implant position.

**Note:**

The **Alignment Rod** may be inserted through the Gap Gauge handle to assess the extramedullary alignment in both extension and flexion.



18 mm = 9 mm **Tibial Insert** thickness + 9 mm **Femoral Component** thickness

Instruments



Gap Gauge



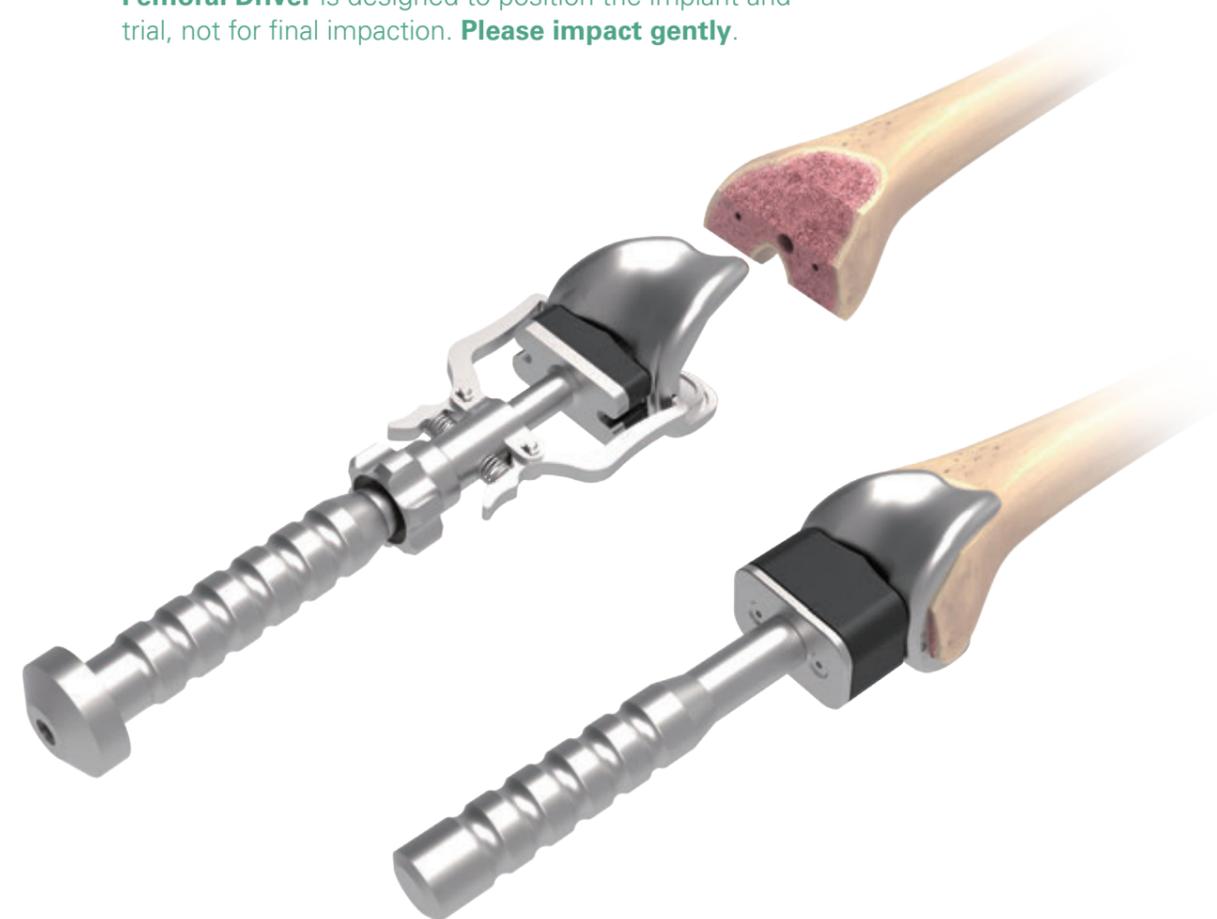
Alignment Rod

# F. Femoral Trial Preparation

## Initial Femoral Trial Insertion

Assemble the selected size of **CR Femoral Trial** to the **Femoral Driver**. Introduce the femoral trial onto the prepared femur until its sitting 2-3 mm above the resected femoral surface. Strike the **CR Femoral Trial** onto the resected femur with the **Femoral Impactor**.

**Caution:** **Femoral Driver** is designed to position the implant and trial, not for final impaction. **Please impact gently.**



Instruments



CR Femoral Trial



Femoral Driver



Femoral Impactor

# G.CR Pegs Preparation

Drill the fixation peg holes on the **CR Femoral Trial** with the **Femoral Condyle Drill**.



Instruments



CR Femoral Trial

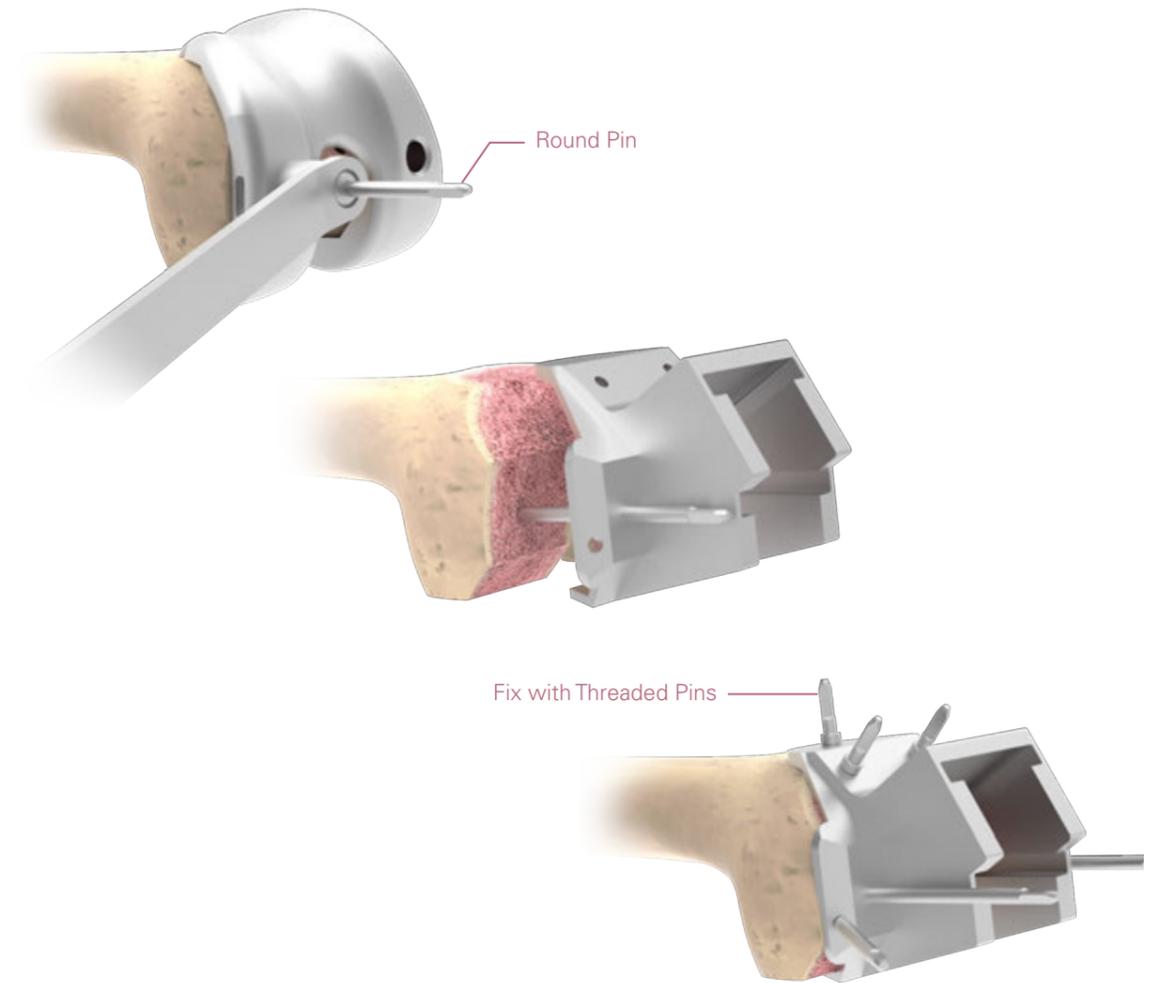


Femoral Condyle Drill

# H.PS Box Preparation

## Position the PS Notch Cutting Jig

With the reusable **CR Femoral Trial** in place, insert the **PS Cutting Jig Drill Guide** onto one fixation peg hole. Drill a pilot hole with **3.2 mm Drill** through the pin hole on the drill guide and place a **Round Pin** through the drill guide to further position the **PS Notch Cutting Jig**. Remove the **CR Femoral Trial** and secure the **PS Notch Cutting Jig** with **Threaded Pins**. The M/L width of **PS Notch Cutting Jig** is the same as the M/L width of the implant.



Fix with Threaded Pins

Instruments



CR Femoral Trial



PS Cutting Jig Drill Guide



3.2mm Drill



Round Pin



PS Notch Cutting Jig

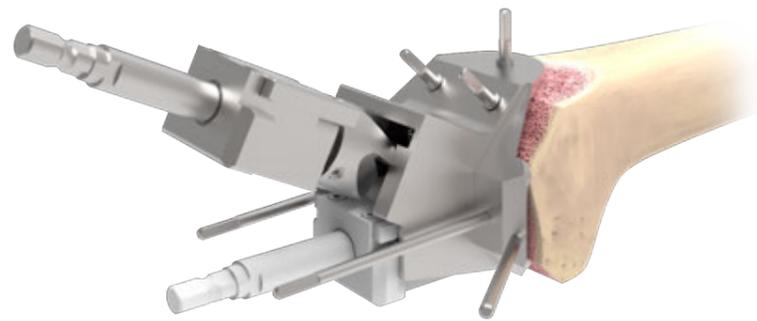


Threaded Pin 30 mm/50 mm

# H.PS Box Preparation

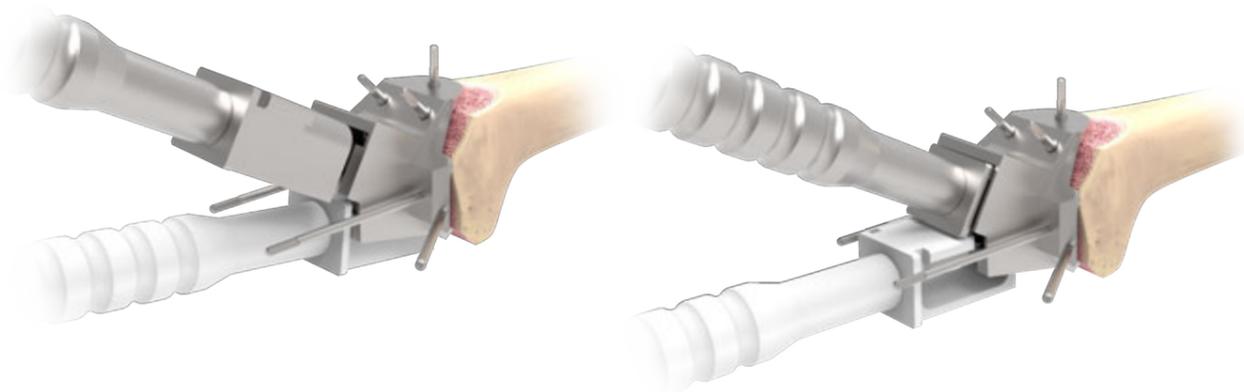
## Prepare PS Box

Attach the **PS Reamer** to a drill and insert into the anterior guide slot on the **PS Notch Cutting Jig**. Ream until fully engaged with the stopping point. Repeat for the posterior guide slot.



Advance the **PS Housing Punch** into the anterior guide slot to remove any remaining bone or tissue. Repeat for the posterior guide slot.

Advance the **PS Housing Impactor** into the anterior guide slot until fully engaged with the stopping mechanism to verify all bone and tissue is removed. Repeat for the posterior guide slot.



Instruments



PS Notch Cutting Jig



PS Reamer



PS Housing Punch

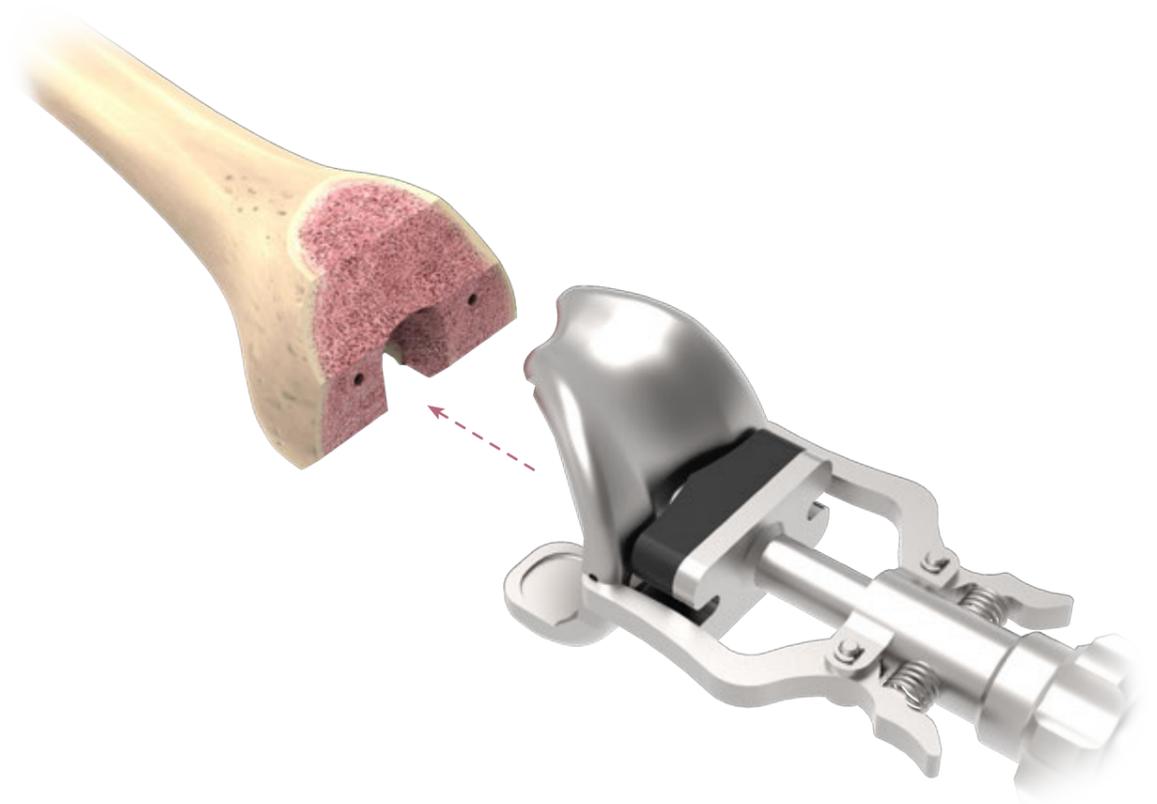


PS Housing Impactor

# H.PS Box Preparation

## Trial Reduction

Replace the **PS Notch Cutting Jig** and pins with **PS Femoral Trial**.



Instruments



PS Femoral Trial



Femoral Driver

# I. Proximal Tibial Preparation

## Tibial Baseplate Sizing

Attach the **Tibial Baseplate Trial Handle** to the **Tibial Baseplate Trial** and size the tibia. Alternatively, insert an **Alignment Rod** in the guide hole on the **Tibial Baseplate Trial Handle** and have the rod parallel to the tibial axis and its distal end aligned with the second toe as a reference for tibial baseplate position.



Instruments



Tibial Baseplate Trial

Tibial Baseplate Trial Handle

Alignment Rod

# I. Proximal Tibial Preparation

## Creating Space for Tibial Baseplate

Fix the **Tibial Baseplate Trial** on the tibia with 2 **Head Pins**. Attach the **Tibial Drill Guide** and drill an opening with the **MBA Tibial Boss Drill** until fully seated. Then remove the **Tibial Drill Guide** and **MBA Tibial Boss Drill**.

If the cemented or press fit extension stem is needed, please refer to the Appendix B-1 or B-2.



Instruments



Tibial Baseplate Trial

Tibial Drill Guide

Head Pin

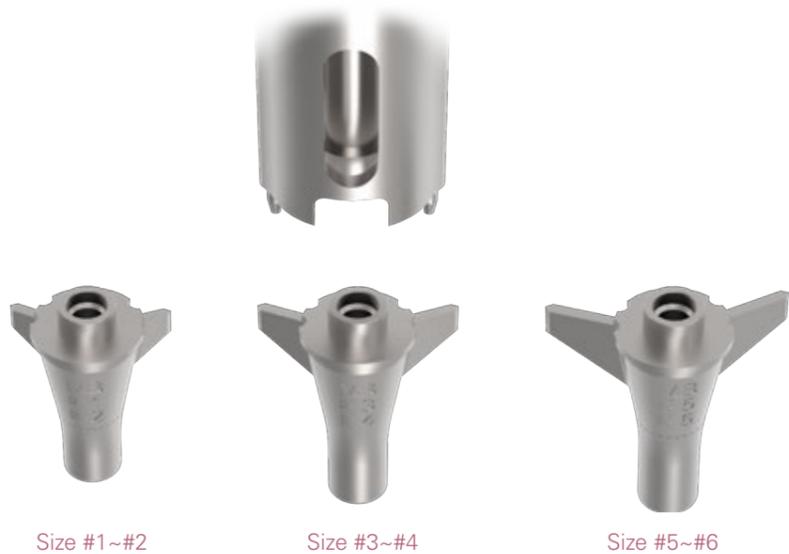
MBA Tibial Boss Drill

MB Tibial Boss Drill\*

\*For MB Tibial Baseplate, using the MB Tibial Boss Drill in creating baseplate space.

# I. Proximal Tibial Preparation

Choose the **MBA Tibial Punch** that corresponds to selected **Tibial Baseplate Trial** and attach it to the **MB Tibial Punch Handle**. The corresponding sizes are marked on the side of the **Tibial Punch**.



Position the handle to the guide hole on the **MBA Tibial Baseplate Trial** and to ensure that the **MBA Tibial Punch** hits precisely and vertically into the tibial canal.

Detach the **MBA Tibial Punch** from the handle, leaving the **MBA Tibial Punch** in the canal for following trial reduction. Then remove the pins.



Instruments

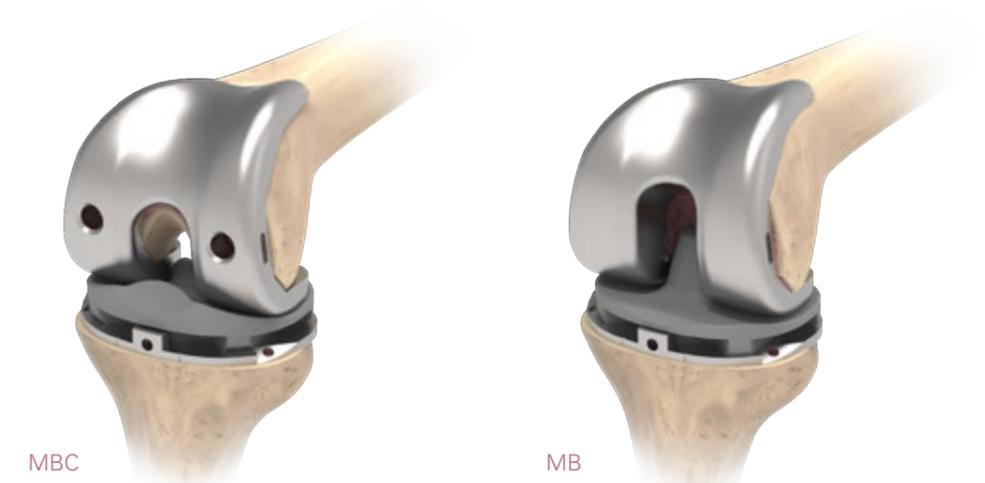
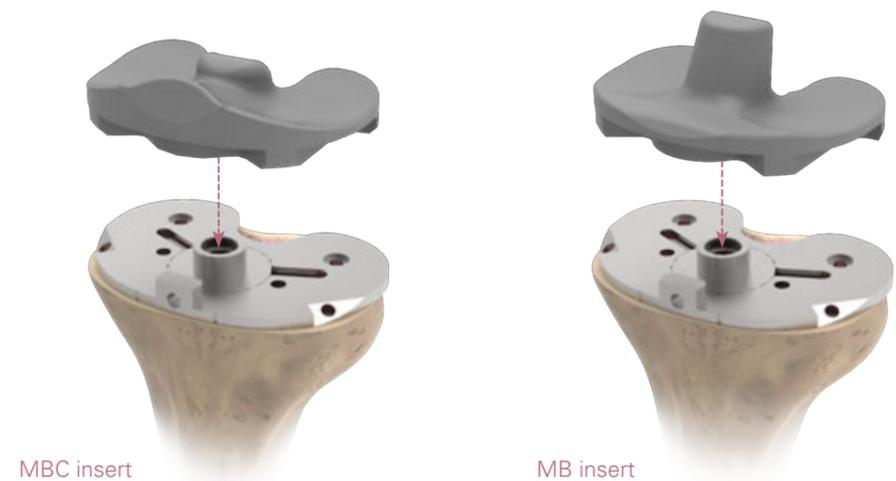


\*For MB Tibial Baseplate, using the MB Tibial Punch in creating baseplate space.

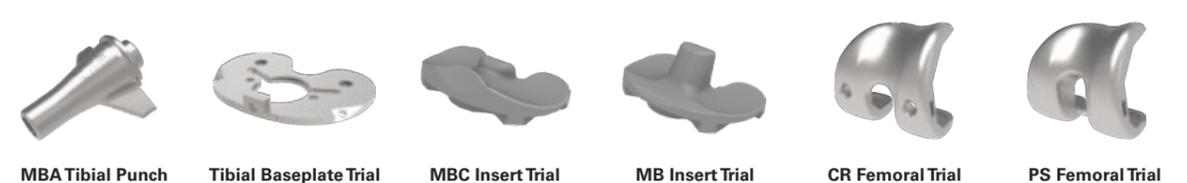
# I. Proximal Tibial Preparation

The **MBA Tibial Punch** allows the baseplate trial to be fixed in place. Locate the **CR Femoral Trial** or **PS Femoral Trial** and choose a **MBC Tibial Insert Trial** or **MB Tibial Insert Trial** with a proper thickness and place it on the **MBA Tibial Punch**.

Evaluate joint stability using the selected trial components. Switch to different **Tibial Insert Trial** thicknesses as needed to obtain optimal stability.



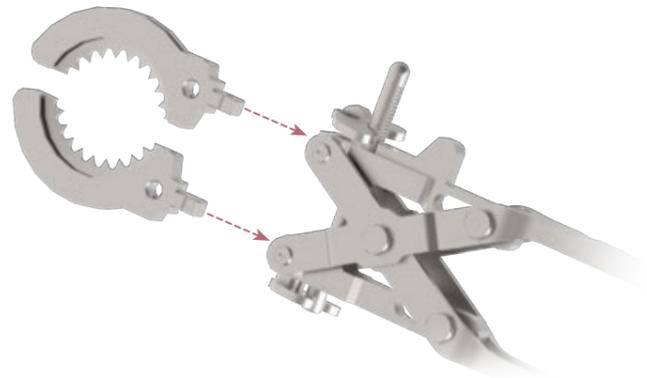
Instruments



# J.Onset Patellar Preparation

## Patella Sizing and Bone Resection

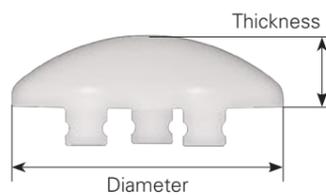
When the onset patellar component is chosen, assemble the **Onset Patellar Resection Guide** to the **Patellar Resection Clamp**.



Use the stylus on the bottom of **Onset Patellar Resection Guide** to check if the remained patellar thickness exceeds 10 mm.



### Onset Patellar Component



Size	XS	S	M	L	XL	XXL	EL
<b>Thickness</b>	7	8	8.5	9	9.5	10	10.5
<b>Diameter</b>	26	29	32	35	38	41	44

Unit : mm

#### Instruments



Patellar Resection Clamp

Onset Patellar Resection Guide

# J.Onset Patellar Preparation

Clamp the patella tight and place the saw blade into the slot of the clamp and resect the patella until the showing subchondral bone.



Then choose the appropriate size **Onset Patellar Drill Guide**, and drill three peg holes with the **Onset Patellar Peg Drill** completing the onset patellar preparation.

Place the **Onset Patellar Trial** in place and confirm the restored patellar AP thickness.



#### Instruments



Patellar Resection Clamp

Onset Patellar Resection Guide

Onset Patellar Drill Guide

Onset Patellar Peg Drill

Onset Patellar Trial

# K. Inset Patellar Preparation

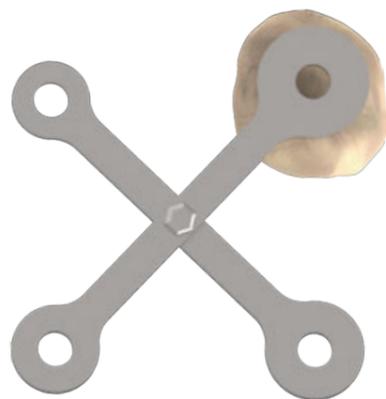
## Patella Sizing and Bone Resection

Place the knee in full extension and evert the patella with caution. Remove the excessive cartilage and osteophytes adjacent to the border of patella. Use the **Caliper** to measure the anterior-posterior dimension of the patella.



Use the **Patellar Sizing Rings** to evaluate bone coverage and select the optimal size. Once the optimal size has been selected, set positioning by locating the central hole of the sizing ring with the center of the medial ridge of the patella. While holding the sizing ring in place, mark the outer border of the selected sizing ring.

Inset Patellar Sizing Ring Diameter: 22,25,28,32 mm



**Surgical Tip:**  
It is suggested to leave at least 2 mm from the ring to the border of the patella.

Instruments



Caliper

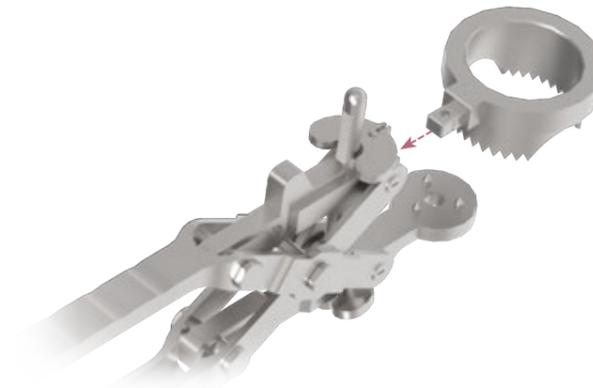


Patellar Sizing Ring

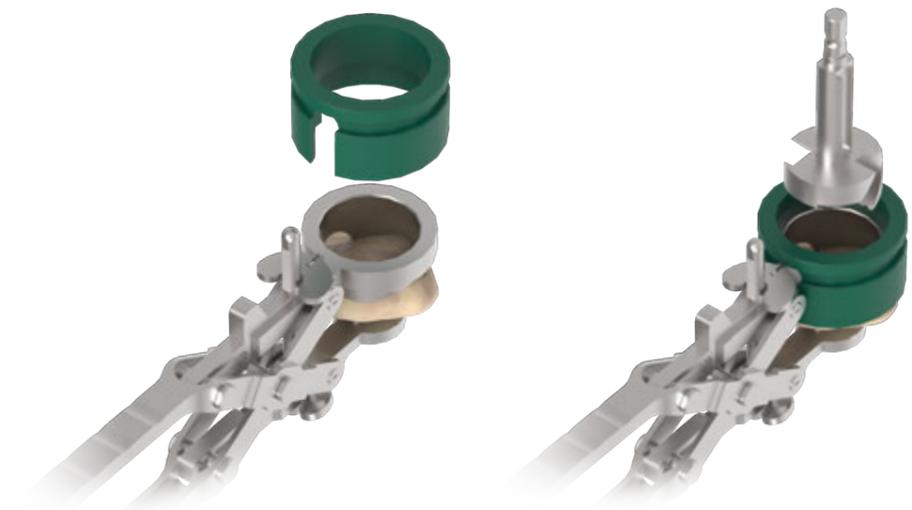
# K. Inset Patellar Preparation

## Inset Patellar Reaming Depth and Pilot Hole

Attach the appropriate size of **Patellar Clamp Ring** to the **Patellar Resection Clamp**.



Align the **Patellar Clamp Ring** on the patella clamp to the previously marked position and secure to the patella by depressing the handles on the clamp. Choose the **Patellar Drill Depth Sleeve** that corresponds to the selected patella size and place over the clamp ring. Insert the **Patella Reamer** into the Patella ring until its tip is touching the patella.



Instruments



Patellar Clamp Ring



Patellar Resection Clamp



Patellar Drill Depth Sleeve



Patella Reamer

# K. Inset Patellar Preparation

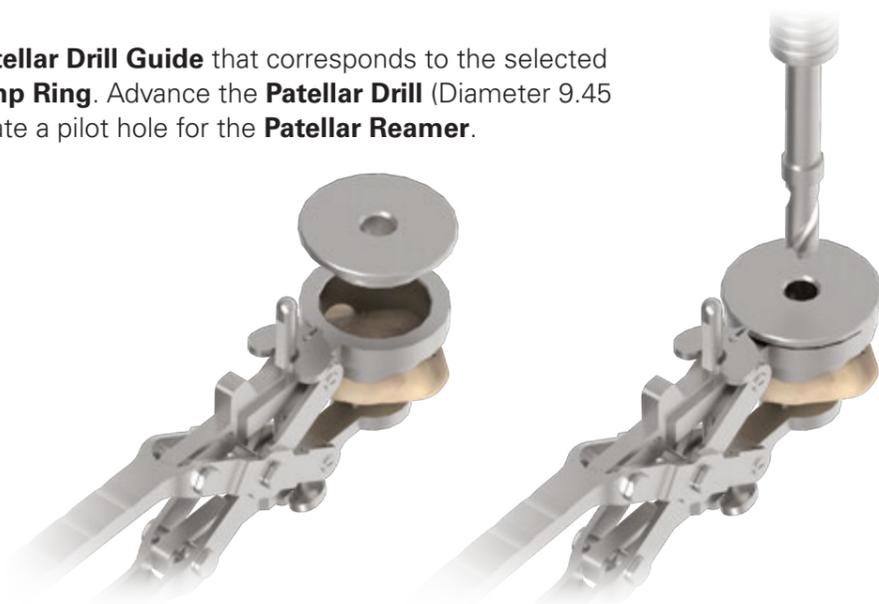
Use the **Screwdriver, Hex 5** to assemble the **Patellar Reamer Stopper** onto the **Patellar Reamer** with the stopper seated on the depth sleeve. This will ensure the drill depth of the reamer equals the patellar component thickness.

**Note:**  
If the thickness of patella is smaller than 20 mm, it will be necessary to adjust the stopper manually to the desired drill depth to retain at least 8 mm patellar thickness.

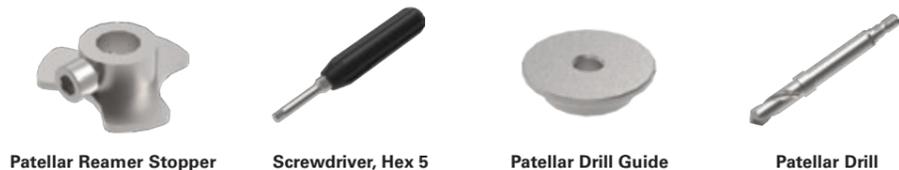


Remove the **Patellar Depth Sleeve** and the **Patella Reamer**, leaving the Patellar Reamer Stopper attached to the reamer.

Insert the **Patellar Drill Guide** that corresponds to the selected **Patellar Clamp Ring**. Advance the **Patellar Drill** (Diameter 9.45 mm) and create a pilot hole for the **Patellar Reamer**.



Instruments



Patellar Reamer Stopper

Screwdriver, Hex 5

Patellar Drill Guide

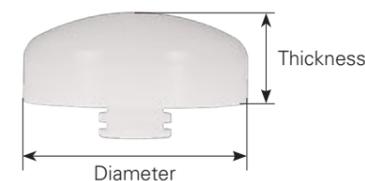
Patellar Drill

# K. Inset Patellar Preparation

Re-insert the **Patellar Reamer** into the **Patellar Clamp Ring** and ream out the proper depth of bone to create the inset bone bed.

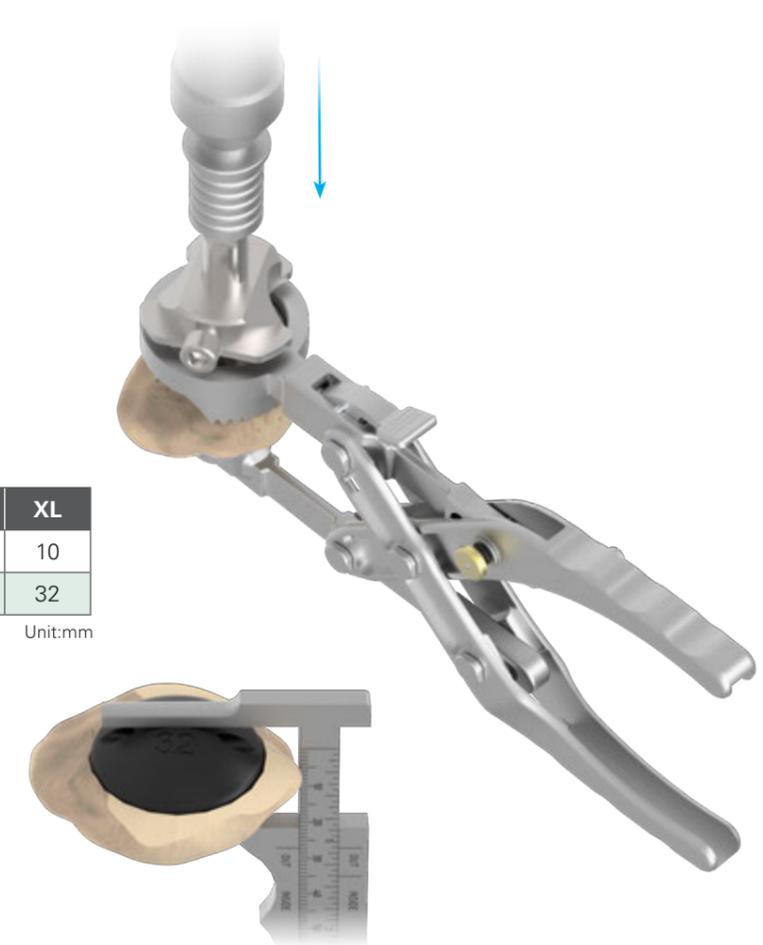
**Note:**  
A minimum bone thickness of 10 mm should be maintained. For thinner patella, the position of the **Patellar Reamer Stopper** on **Patella Reamer** may need to be manually adjusted to ensure sufficient bone bed thickness.

Inset Patellar Component



Size	S	M	L	XL
Thickness	8	10	10	10
Diameter	22	25	28	32

Unit:mm



Then, Place the **Inset Patellar Trial** in place and confirm the restored patellar AP thickness.

Instruments



Patellar Clamp Ring

Patellar Reamer Stopper

Patellar Reamer

Patellar Resection Clamp

Inset Patellar Trial

# L. Implantation

## Final Trial Reduction

Affix the **Patellar Trial, Femoral Trial, Tibial Baseplate Trial**, and **Tibial Insert Trial** to the corresponding resected bony surfaces. Test for joint laxity and range of motion. Observe how the muscles and ligaments react in extension and flexion. Manage the soft tissue tension to ensure ideal joint stability and mobility. Remove all trials and clean the resected bone surfaces.



Instruments



CR Femoral Trial PS Femoral Trial MBC Insert Trial MB Insert Trial Tibial Baseplate Trial, MB Inset Patellar Trial Onset Patellar Trial

# L. Implantation

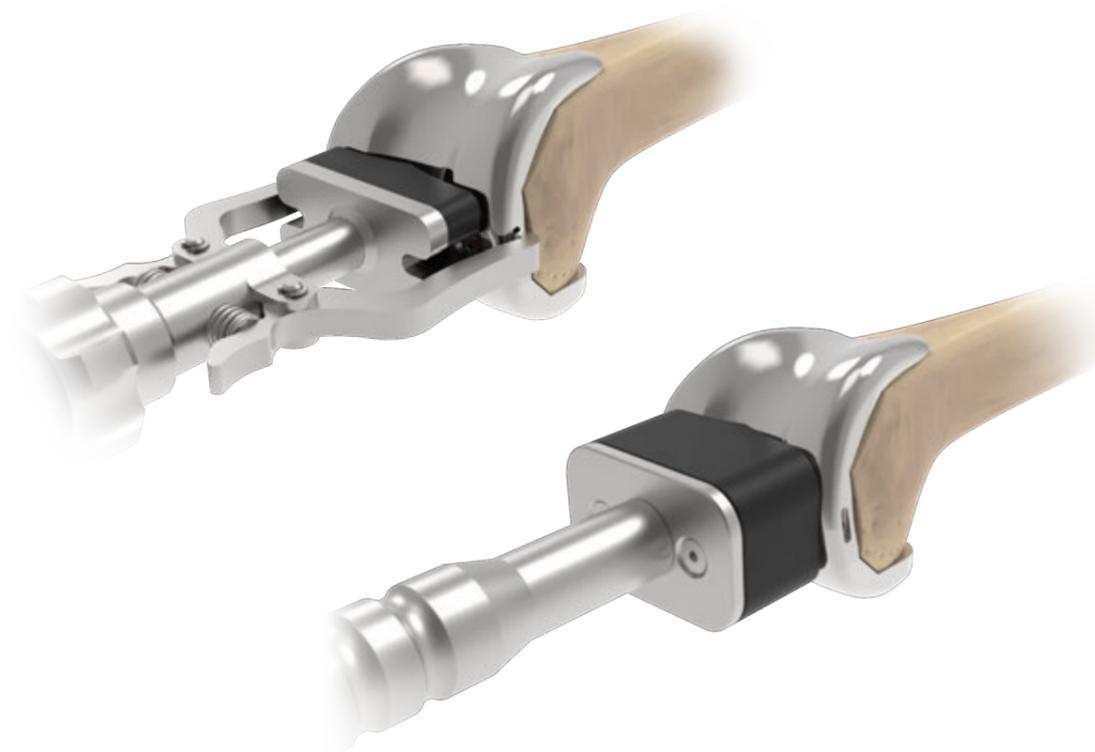
## Femoral Component Implantation

Mix and prepare bone cement in the usual fashion for the femoral component and femoral bone surface. Attach the femoral component to the **Femoral Driver** and press against the prepared femoral bone surface until the component is flush with the bone.

Strike the **Femoral Impactor** to firmly seat the femoral component in place against the femoral bone surface. Use an instrument such as a curette to remove any excess, extruded cement.

**⚠ Caution:**

The femoral Driver is designed to position the implant and trial, not for final impaction. Please **impact gently** to avoid instrument breakage.



Instruments



Femoral Driver Femoral Impactor

# L. Implantation

## Tibial Baseplate Component Implantation

Manually advance the **Tibial Baseplate** into the tibia until its sitting 2-3 mm above the resected tibial surface, confirming alignment with the tibial axis. Fully seat the **Tibial Baseplate** using the **Tibial Baseplate Impactor** until fully seated.



Instruments



Tibial Baseplate Impactor

# L. Implantation

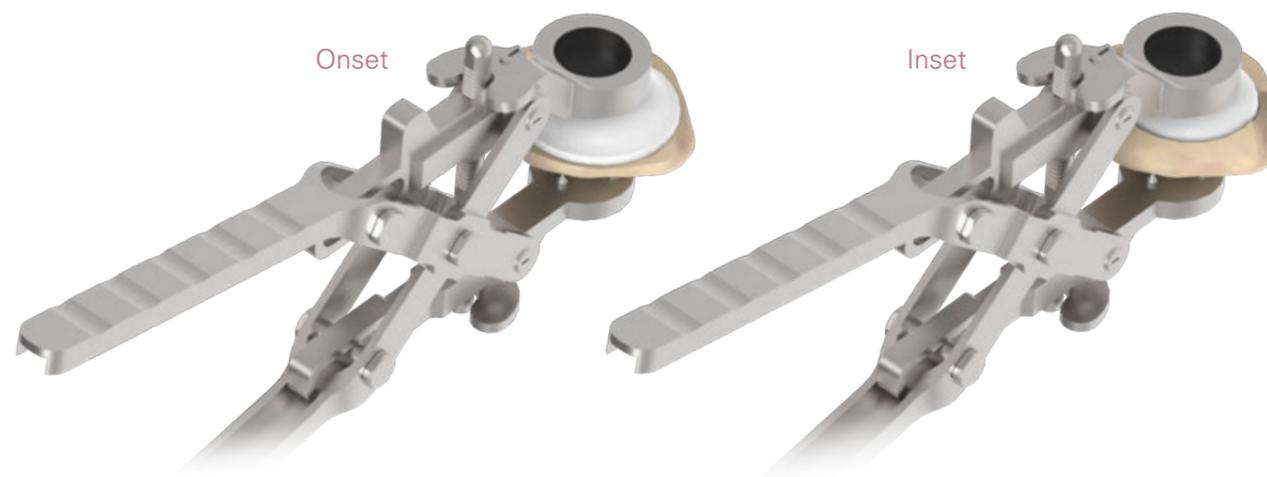
## Patellar Component Implantation

Mix and prepare bone cement in the usual fashion for the patella component and patella bone surface.

Manually insert the patella component into position on the prepared patella surface.

Attach the **Patella Cement Clamp Adapter** to the **Patella Clamp** and depress the clamp to firmly seat the patella component in place against the patellar bone surface. Leave the clamp in place until the cement is set.

Use an instrument such as a curette to remove any excess, extruded cement.



Instruments



Patella Resection Clamp

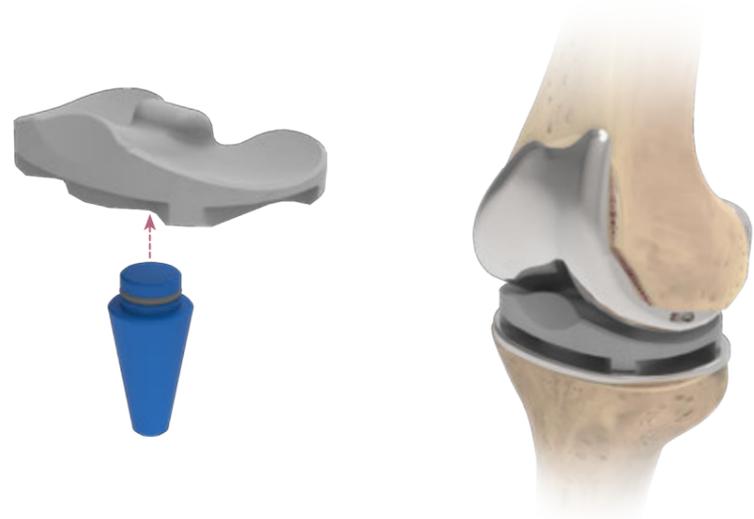


Patella Cement Clamp Adapter

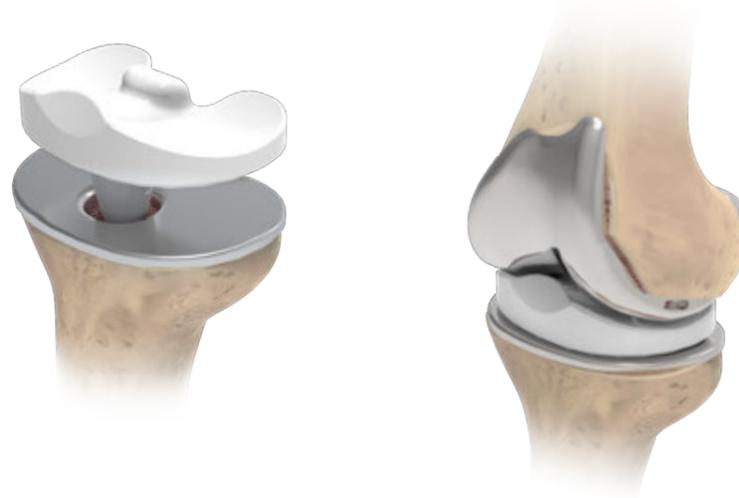
# L. Implantation

## Tibial Insert Implantation

Attach the **MB Tibial Insert Trial Adapter** to the **Mobile Bearing Tibial Insert Trial**, then insert the assembly into the central hole on the tibial baseplate. Keep the knee in extension until the cement pressurization completed.



Perform a final check to confirm the optimal tibial insert thickness with the selected **Tibial Insert Trial**, then insert the corresponding tibial insert into the tibial baseplate.



Instruments



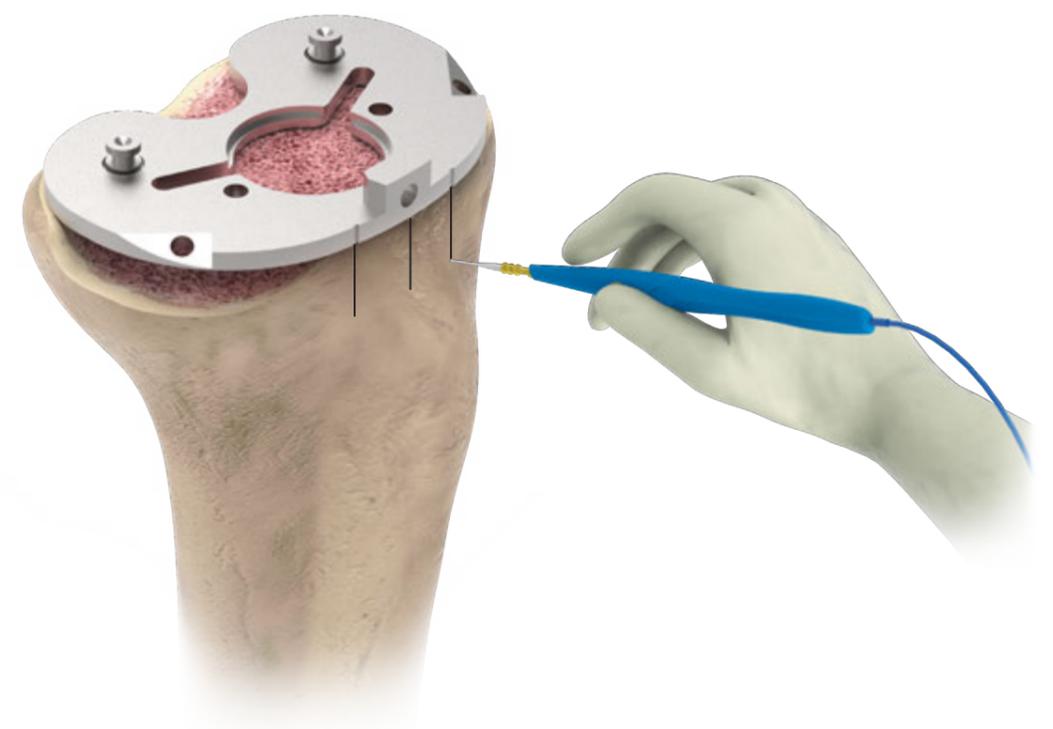
# Appendix :

## Preparing Augment for Cemented MBA Baseplate

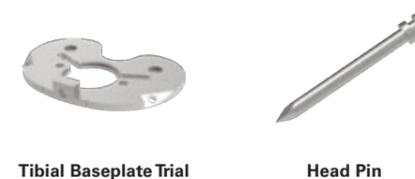
Prepare the initial trial reduction as indicated in "Tibial Baseplate Sizing" --Step I. Then continue with the following steps:

### A. Tibial Augment Resection

Align the **Tibial Baseplate Trial** with the resected tibia surface and secure the baseplate trial to the proximal tibia using two **Head Pins** according to the rotational orientation.



Instruments

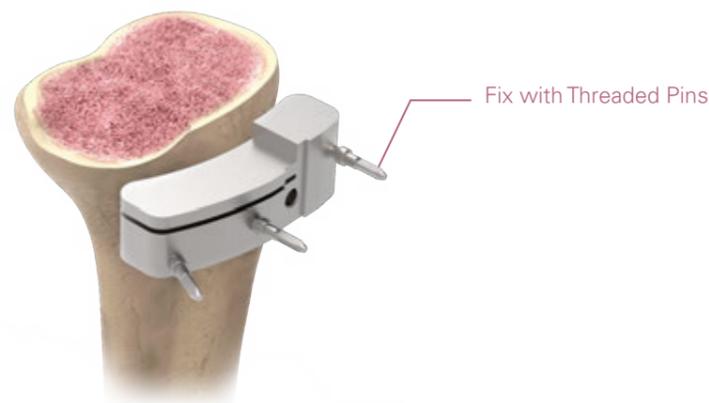


# Appendix :

Assemble the appropriate **Tibial Augment Resection Guide** (left or right) and the **Tibial Augment Resection Guide Adapter** to the **Tibial Baseplate Trial**.



Apply the **Threaded Pins** to secure the **Tibial Augment Resection Guide** to the tibia. Then, remove the **Tibial Augment Resection Guide Adapter** and the **Tibial Baseplate Trial**.



Instruments



Tibial Baseplate Trial

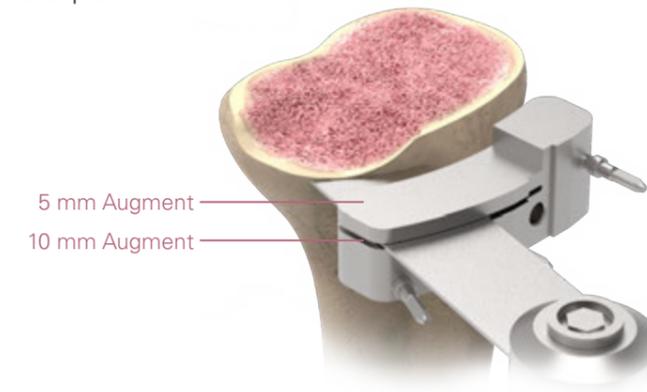
Tibial Augment Resection Guide

Tibial Augment Resection Guide Adapter

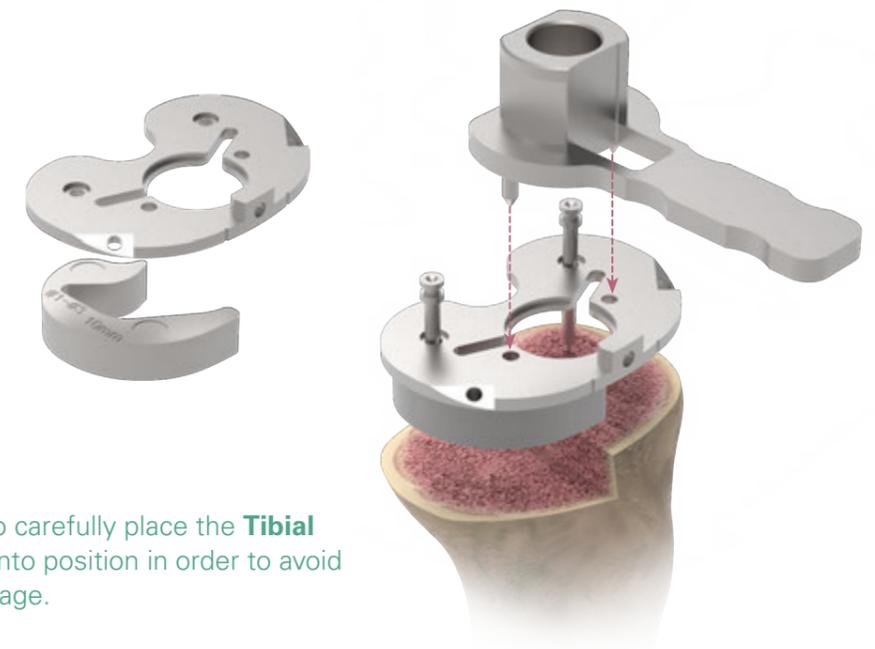
Threaded Pin 30 mm/50 mm

# Appendix :

Perform the horizontal resection by reference the upper plane of 5 mm augment or the slot for 10 mm augment. Finish the vertical resection referring to the center groove on the top of proximal tibial plane.



Assemble the desired **Tibial Augment Trial** to the backside of the **Tibial Baseplate Trial** and fix the trial combination onto the resected tibial surface with two **Head Pins**. Then, attach the **Tibial Drill Guide** to the baseplate trial.



**Caution:** It is important to carefully place the **Tibial Augment Trial** into position in order to avoid instrument damage.

Instruments



Tibial Augment Resection Guide

Tibial Augment Trial

Tibial Drill Guide

Head Pin

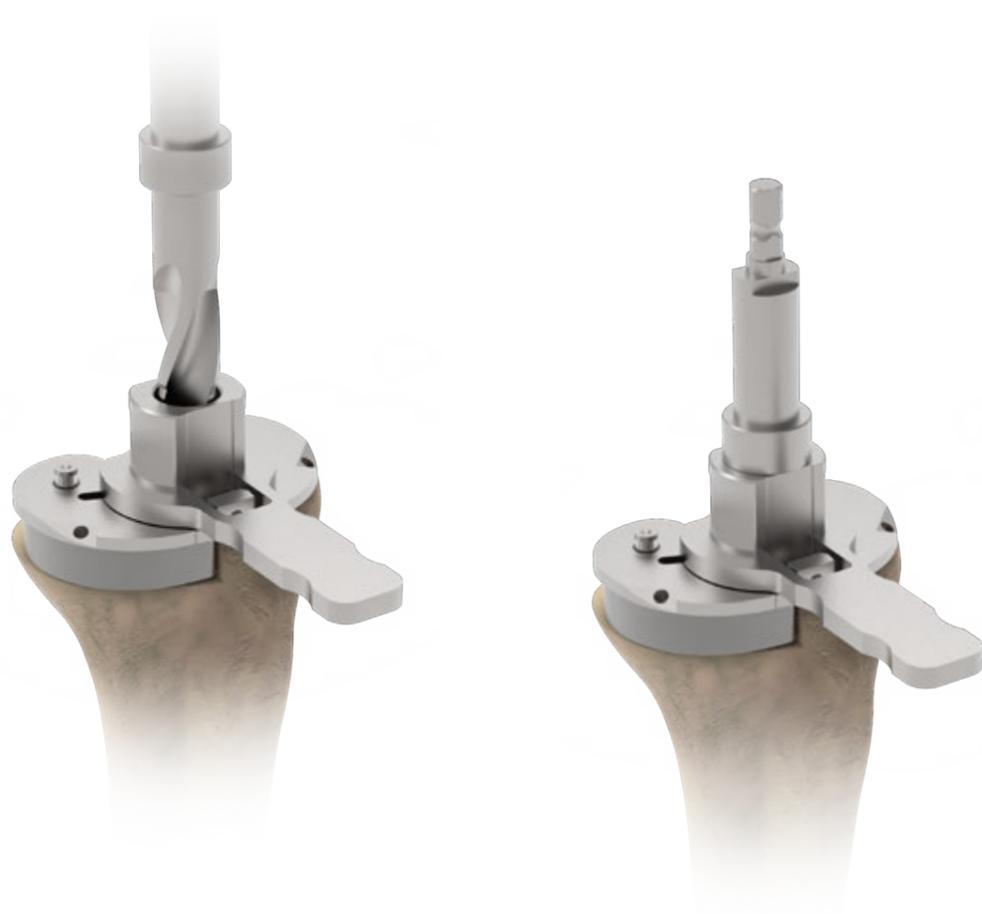
Tibial Baseplate Trial

# Appendix :

## Preparing Extension Stem for Mobile Bearing Baseplate

### B-1. Cemented Tibial Stem Preparation

Advanced the **Tibial Stem Drill, 20 mm** through the **Tibial Drill Guide** until fully seated in the drill guide.



Instruments



Tibial Baseplate Trial

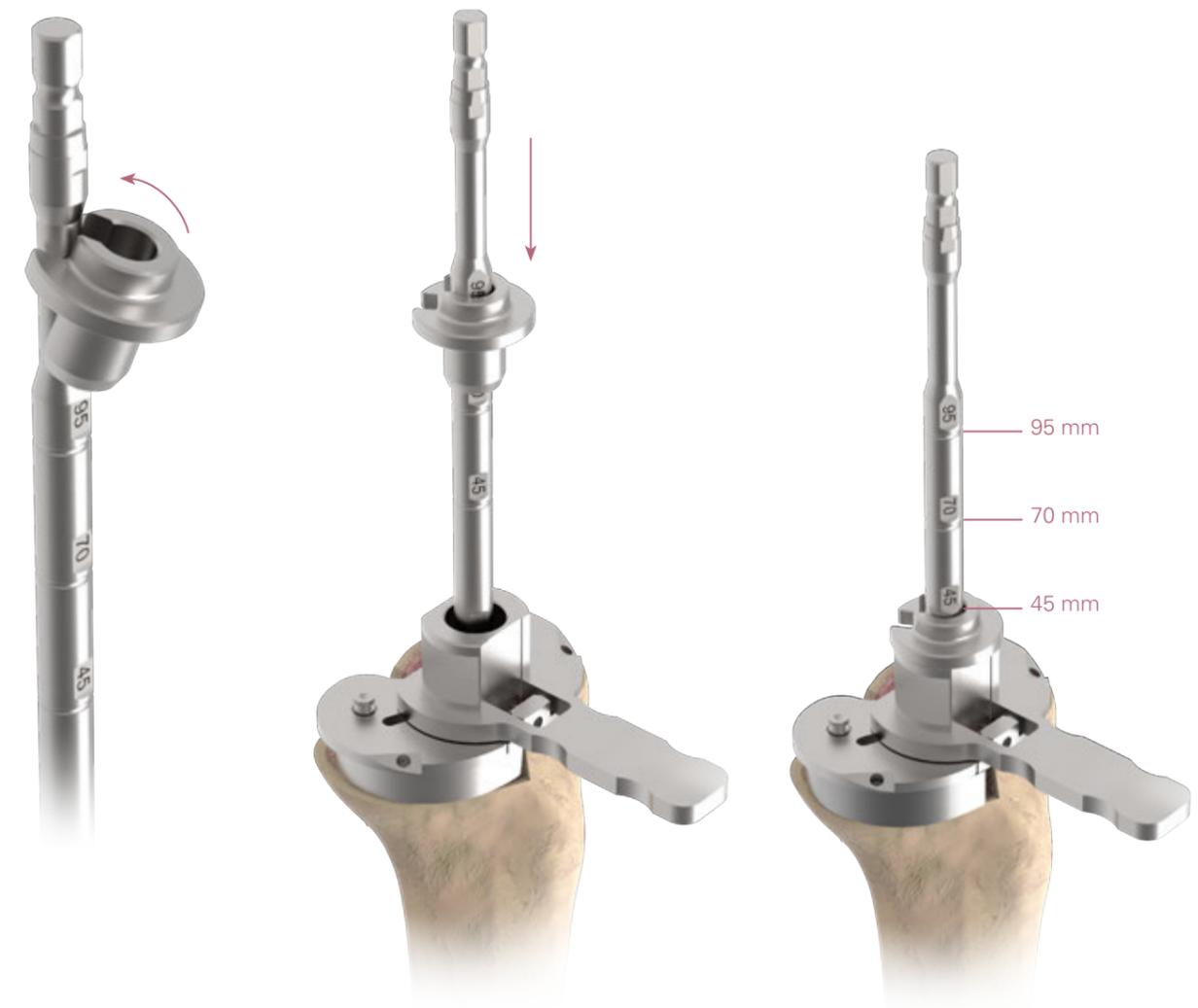
Tibial Drill Guide

Tibial Stem Drill, 20 mm

# Appendix :

If 45-95 mm stem is desired, place the **Tibial Stem Drill Sleeve** over the appropriate **Tibial Stem Drill** and utilize the **Tibial Drill Guide** to guide the drill toward appropriate depth of the desired stem length. Two diameters of **Tibial Stem Drill** are available: 12.5 mm stem drill for cemented use and 9 mm stem drill for line to line.

Then remove the drill sleeve, stem drill and drill guide are removed.



Instruments



Tibial Drill Sleeve

Tibial Stem Drill

Tibial Drill Guide

Tibial Baseplate Trial

# Appendix :

## B-2. Press-fit Tibial Stem Preparation

If 45 mm press fit stem is desired, advanced the appropriate **Tibial Stem Drill, 45 mm** through the **Tibial Drill Guide** until fully seated in the drill guide.



Instruments



Tibial Baseplate Trial



Tibial Drill Guide



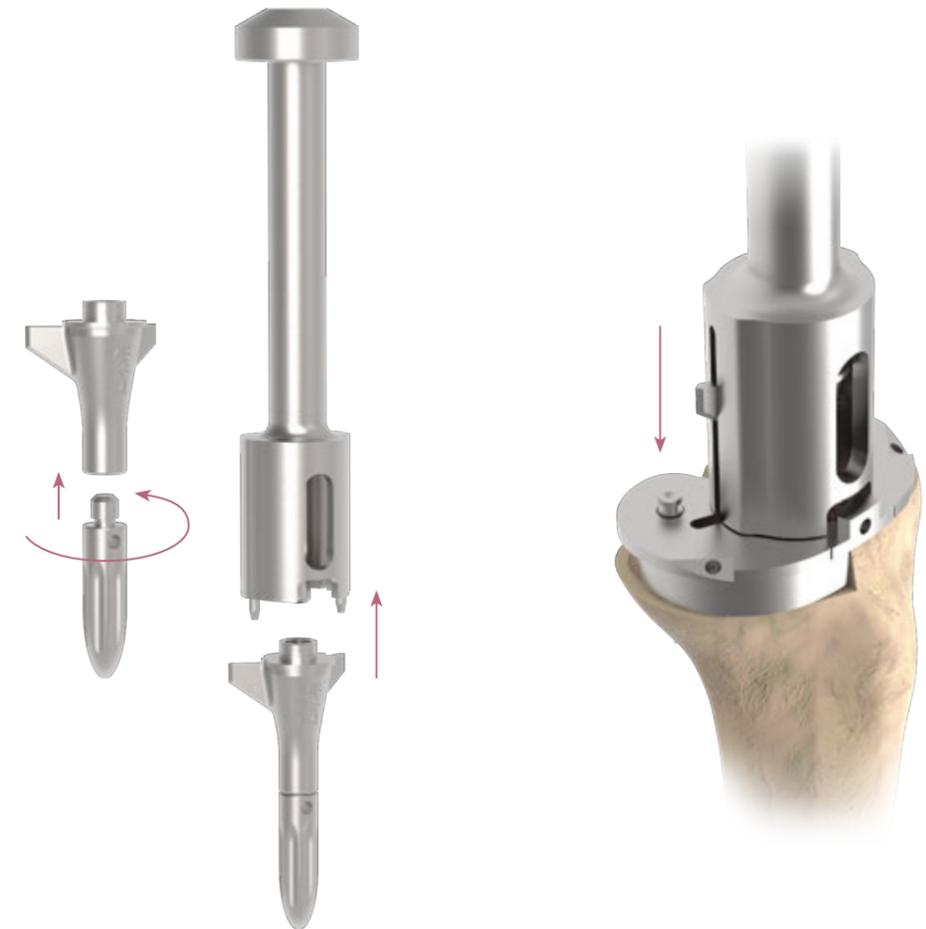
Tibial Stem Drill, 45 mm

# Appendix :

## C. Tibial Fin Preparation

Choose the corresponding **MBA Tibial Punch** and attach to the **Tibial Stem Trial**, then attach it to a **MB Tibial Punch Handle**. Position the handle to the guide hole on the **Tibial Baseplate Trial** and to ensure that the **MBA Tibial Punch** hits precisely and vertically into the tibial canal. Detach the tibial punch from the handle, leaving the **MBA Tibial Punch** in the canal for following trial reduction. Then remove the pins.

Once this step is complete refer back to Section " Proximal Tibial Preparation, page 32" of the standard technique guide.



Instruments



MBA Tibial Punch



Tibial Stem Trial



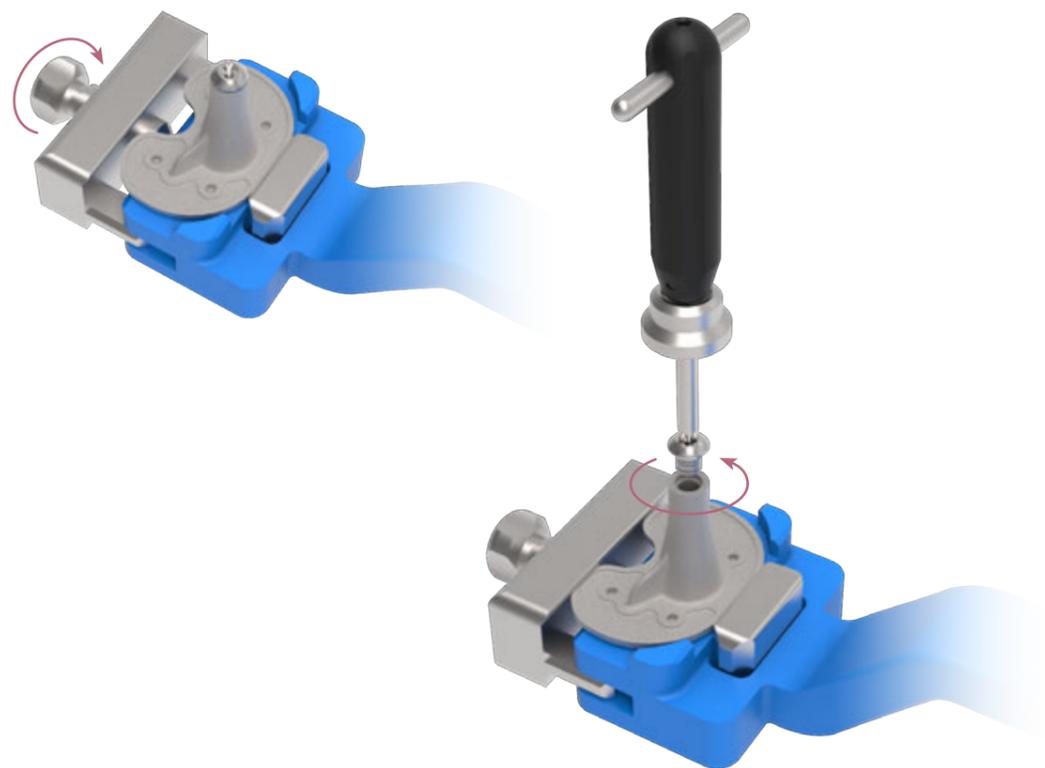
MB Tibial Punch Handle

# Appendix :

## D. Implant Fixation

If extension stem is desired, place the baseplate on the **Tibial Baseplate Locking Base** then secure the knob on the **Tibial Baseplate Locking Base** until the baseplate is well fixed.

Assemble the **Screwdriver Adapter, T30** to the **Driver Handle**, then remove the existing distal plug on the implant with the screwdriver.



Instruments



Tibial Baseplate Locking Base



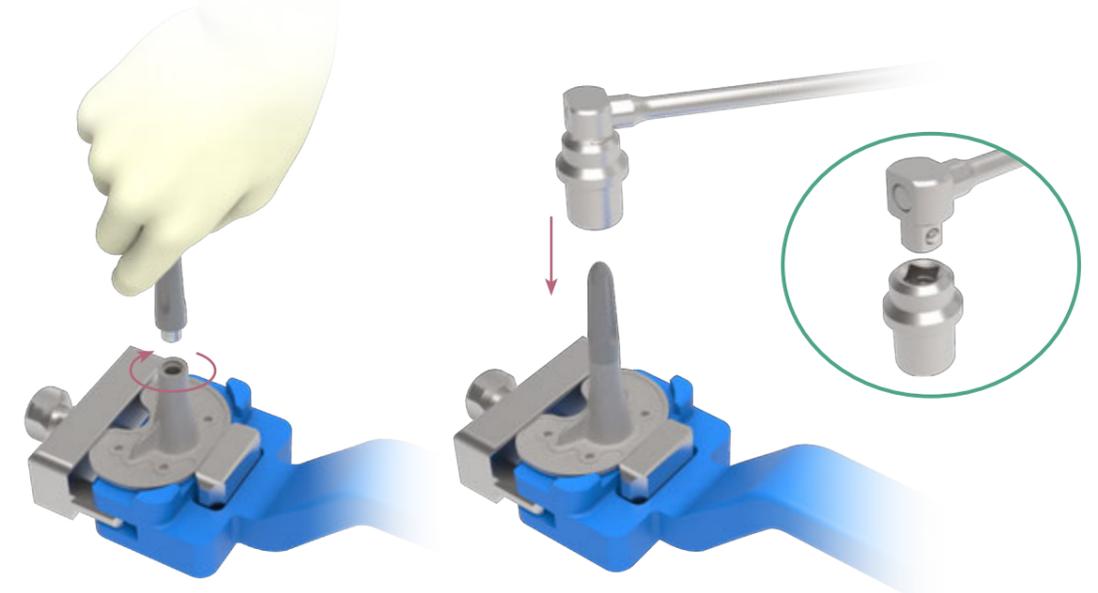
Driver Handle



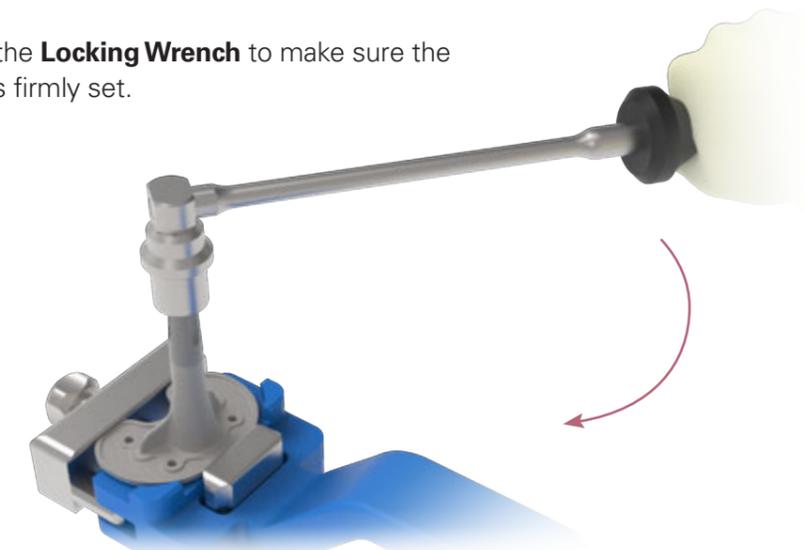
Screwdriver Adapter, T30

# Appendix :

Manually thread the tibial stem onto the baseplate. Assemble the **Locking Wrench** to the corresponding **Torque Wrench Adapter**.



Using the **Locking Wrench** to make sure the stem is firmly set.



Instruments



Tibial Baseplate Locking Base



Torque Wrench Adapter



Locking Wrench

# Appendix :

If augment is desired, assemble the **Screwdriver Adapter, T20** to the **Driver Handle**, then fasten the determined augment onto the cemented MBA baseplate. Then, complete the implant fixation.



Instruments



Driver Handle



Screwdriver Adapter, T20

# Order Information

Special Order Items

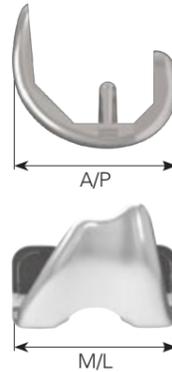
## Femoral Component



CR



PS

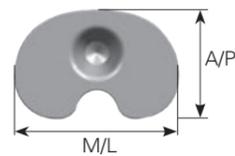


	Cemented		Porous	
	Left	Right	Left	Right
#1	2103-1310	2103-1410	2103-1110	2103-1210
#1.5	2103-1315	2103-1415	2103-1115	2103-1215
#2	2103-1320	2103-1420	2103-1120	2103-1220
#2.5	2103-1325	2103-1425	2103-1125	2103-1225
#3	2103-1330	2103-1430	2103-1130	2103-1230
#3.5	2103-1335	2103-1435	2103-1135	2103-1235
#4	2103-1340	2103-1440	2103-1140	2103-1240
#4.5	2103-1345	2103-1445	2103-1145	2103-1245
#5	2103-1350	2103-1450	2103-1150	2103-1250
#5.5	2103-1355	2103-1455	2103-1155	2103-1255
#6	2103-1360	2103-1460	2103-1160	2103-1260
#6.5	2103-1365	2103-1465	2103-1165	2103-1265

	Cemented	
	Left	Right
#1	2103-3110	2103-3210
#1.5	2103-3115	2103-3215
#2	2103-3120	2103-3220
#2.5	2103-3125	2103-3225
#3	2103-3130	2103-3230
#3.5	2103-3135	2103-3235
#4	2103-3140	2103-3240
#4.5	2103-3145	2103-3245
#5	2103-3150	2103-3250
#5.5	2103-3155	2103-3255
#6	2103-3160	2103-3260
#6.5	2103-3165	2103-3265

	A/P	M/L
#1	52	56
#1.5	54	58
#2	56	60
#2.5	58	62
#3	60	64
#3.5	62	66
#4	64	68
#4.5	66	70
#5	68	72
#5.5	70	74
#6	72	76
#6.5	74	78

## Tibial Baseplate



	MB	MBA
#1	2203-7010	2203-7210
#2	2203-7020	2203-7220
#3	2203-7030	2203-7230
#4	2203-7040	2203-7240
#5	2203-7050	2203-7250
#6	2203-7060	2203-7260

	MBA TPS PLUS
#1	2203-7410
#2	2203-7420
#3	2203-7430
#4	2203-7440
#5	2203-7450
#6	2203-7460

	A/P	M/L
#1	42	63
#2	44.5	66
#3	47	69
#4	49.5	72
#5	52.5	76
#6	55.5	80

# Order Information

Special Order Items

## Tibial Insert



MBC Insert

	UHMWPE				
	9 mm	11 mm	13 mm	15 mm	18 mm
#1	2303-7211	2303-7212	2303-7213	2303-7214	2303-7215
#2	2303-7221	2303-7222	2303-7223	2303-7224	2303-7225
#3	2303-7231	2303-7232	2303-7233	2303-7234	2303-7235
#4	2303-7241	2303-7242	2303-7243	2303-7244	2303-7245
#5	2303-7251	2303-7252	2303-7253	2303-7254	2303-7255
#6	2303-7261	2303-7262	2303-7263	2303-7264	2303-7265

	XPE				
	9 mm	11 mm	13 mm	15 mm	18 mm
#1	2303-7611	2303-7612	2303-7613	2303-7614	2303-7615
#2	2303-7621	2303-7622	2303-7623	2303-7624	2303-7625
#3	2303-7631	2303-7632	2303-7633	2303-7634	2303-7635
#4	2303-7641	2303-7642	2303-7643	2303-7644	2303-7645
#5	2303-7651	2303-7652	2303-7653	2303-7654	2303-7655
#6	2303-7661	2303-7662	2303-7663	2303-7664	2303-7665



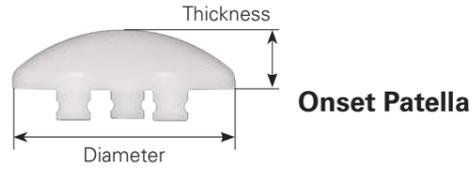
MB Insert

	UHMWPE				
	9 mm	11 mm	13 mm	15 mm	18 mm
#1	2303-7011	2303-7012	2303-7013	2303-7014	2303-7015
#2	2303-7021	2303-7022	2303-7023	2303-7024	2303-7025
#3	2303-7031	2303-7032	2303-7033	2303-7034	2303-7035
#4	2303-7041	2303-7042	2303-7043	2303-7044	2303-7045
#5	2303-7051	2303-7052	2303-7053	2303-7054	2303-7055
#6	2303-7061	2303-7062	2303-7063	2303-7064	2303-7065

	XPE				
	9 mm	11 mm	13 mm	15 mm	18 mm
#1	2303-7511	2303-7512	2303-7513	2303-7514	2303-7515
#2	2303-7521	2303-7522	2303-7523	2303-7524	2303-7525
#3	2303-7531	2303-7532	2303-7533	2303-7534	2303-7535
#4	2303-7541	2303-7542	2303-7543	2303-7544	2303-7545
#5	2303-7551	2303-7552	2303-7553	2303-7554	2303-7555
#6	2303-7561	2303-7562	2303-7563	2303-7564	2303-7565

# Order Information

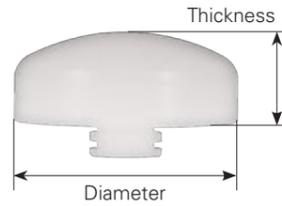
## Patellar Component



	XS	S	M	L	XL	XXL	EL
<b>UHMWPE</b>	2403-1010	2403-1020	2403-1030	2403-1040	2403-1050	2403-1060	2403-1070
<b>XPE</b>	2403-3210	2403-3220	2403-3230	2403-3240	2403-3250	2403-3260	2403-3270
<b>E-XPE</b>	2403-5210	2403-5220	2403-5230	2403-5240	2403-5250	2403-5260	2403-5270

<b>Thickness</b>	7	8	8.5	9	9.5	10	10.5
<b>Diameter</b>	26	29	32	35	38	41	44

Unit:mm



**Inset Patella**

	S	M	L	XL
<b>UHMWPE</b>	2401-1010	2401-1020	2401-1030	2401-1040
<b>XPE</b>	2403-3010	2403-3020	2403-3030	2403-3040
<b>E-XPE</b>	2403-5010	2403-5020	2403-5030	2403-5040

<b>Thickness</b>	8	10	10	10
<b>Diameter</b>	22	25	28	32

Unit:mm

## Extensions (MBA)



	#1	#2	#3	#4	#5	#6
<b>Augment 5 mm</b>	2803-7011	2803-7021	2803-7031	2803-7041	2803-7051	2803-7061
<b>Augment 10 mm</b>	2803-7012	2803-7022	2803-7032	2803-7042	2803-7052	2803-7062



	Ø9 x 20 mm	Ø9 x 45 mm	Ø9 x 70 mm	Ø9 x 95 mm
<b>Straight Stem</b>	2715-5109	2715-5209	2715-5309	2715-5409



	Ø12.5 x 45 mm	Ø14 x 45 mm
<b>Press-fit Stem</b>	2715-7212	2715-7214

# Size Pairing Chart

## MBC

CR Femoral Component	#1	#1.5	#2	#2.5	#3	#3.5	#4	#4.5	#5	#5.5	#6	#6.5
MBC Insert	#1	#2	#3	#4	#5	#6						
<b>Mobile Bearing Baseplate</b>	#1	●	●	—	—	—	—					
	#2	●	●	●	—	—	—					
	#3	●	●	●	●	—	—					
	#4	●	●	●	●	●	—					
	#5	●	●	●	●	●	●	—				
	#6	●	●	●	●	●	●	●				

## MB

PS Femoral Component	Fully Interchangeable Between Femoral Component and Insert					
MB Insert	#1	#2	#3	#4	#5	#6
<b>Mobile Bearing Baseplate</b>	#1	●	●	—	—	—
	#2	●	●	●	—	—
	#3	●	●	●	●	—
	#4	●	●	●	●	●
	#5	●	●	●	●	●
	#6	●	●	●	●	●

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