

Persona® PPS® Femur
Persona® OsseoTi® Keel Tibia
Persona® Cemented Keel Tibia
Persona® OsseoTi® 3 Peg Patella

Surgical Technique



Persona PPS Femur
Persona OsseoTi Keel Tibia
Persona® MC Bearing
Persona OsseoTi 3 Peg Patella

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Introduction

Successful total knee arthroplasty depends in part on re-establishment of normal lower extremity alignment, proper implant design and orientation, secure implant fixation, and adequate soft tissue balancing and stability. Persona The Personalized Knee is designed to help the surgeon accomplish these goals by combining alignment accuracy with a simple, straight-forward technique.

The instruments and technique assist the surgeon in restoring the center of the hip, knee, and ankle to lie in a straight line, establishing a neutral mechanical axis. The femoral and tibial components are oriented perpendicular to this axis. Femoral rotation is determined using the posterior condyles, the epicondylar axis, or Whiteside's line as a reference. The instruments enable accurate cuts to ensure robust component fixation.

This technique is utilized to prepare for the Persona 0° keel tibia plate offerings - both the OsseoTi Keel Tibia and Cemented Keel Tibia implants. These implants differ from our Persona Cemented Stemmed Tibia implants which have a 5° stem in relation to the bottom of the baseplate.

A wide variety of component sizes, shapes, and constraint options allow for optimized component fit and soft tissue balancing. The femur, tibia, and patella are prepared independently, and can be cut in any sequence using the principle of measured resection (removing enough bone to allow replacement by the prosthesis). Adjustment cuts may be needed later. Posterior referencing and anterior referencing instruments are available to set the A/P position of the femoral component.

The OsseoTi 3-Peg Patella is a cementless option for patella resurfacing. This unique design features polyethylene direct compression molded onto solid dovetail features on the top surface of the OsseoTi porous material. This construct creates a mechanically locked junction between the two materials.

Constraint Options

The degree of constraint of the bearing can be planned based on surgeon preference and patient requirements. The use of the cruciate retaining (CR) femoral provisionals and components can be used with either a CR or Medial Congruent® (MC) bearing when the posterior cruciate ligament (PCL) is intact.

The CR femoral provisionals and components can be used when the PCL is sacrificed or deficient and removed, if used with either a MC or ultracongruent (UC) bearing provisionals and components.

Also, posterior stabilized (PS) femoral provisionals and components can be used with the PS or constrained posterior stabilized (CPS) bearings provisionals and components when the PCL is deficient and removed.

PS femoral components cannot be used with CR, MC, or UC bearings and CR femoral components cannot be used with PS or CPS bearings. The CPS bearings can be used to provide moderate varus\valgus constraint in patients to facilitate soft tissue balance and stability.

The CPS bearings shall be used with cemented non-porous femoral and tibial components only.

Additional information for this product may be found in the Constrained Posterior Stabilized (CPS) Surgical Technique (97-5026-072-00).

The MC, UC, PS, and CPS implants can be used in the following situations, depending on the degree of the deformity, the stability of the ligaments, and the quality of the bone. The surgeon is responsible for assessing whether a more constraining implant/system or revision implant/system is necessary.

1. Marked valgus deformity – requiring PCL and lateral soft tissue release.
2. Prior high tibial osteotomies – soft tissue balancing is the same as for a valgus deformity with lateral soft tissue and PCL release.
3. Patellectomy – PCL incomplete or absent.
4. Most revision situations – PCL deficient or nonfunctional.

Note: The MC components can be used with or without the PCL present. The UC, PS, and CPS components should not be used if the PCL is present. Please refer to the package inserts for complete product information, including contraindications, warnings, precautions, and adverse effects.

Pre-operative Planning

Obtain 36 inch or 53 inch standing anteroposterior and lateral radiographs of the extremity, as well as a sunrise view of the patella. The entire femur should be visualized to rule out any structural abnormalities, as the distal femoral cut will be referenced from an intramedullary rod in the medullary canal.

Use the template overlay (available through your Zimmer Biomet representative) to determine the angle between the anatomic axis and the mechanical axis. This angle will be reproduced intra-operatively. This surgical technique helps the surgeon ensure that the distal femur will be cut perpendicular to the mechanical axis and, after soft tissue balancing, will be parallel to the resected surface of the proximal tibia.

Surgical Approach

The surgeon can choose a midvastus approach, a subvastus approach, or a parapatellar medial arthrotomy. Also, depending on surgeon preference, the patella can be either everted or subluxed. The femur, tibia, and patella are prepared independently, and can be cut in any sequence using the principle of measured resection (removing enough bone to allow replacement by the prosthesis).

This technique describes restoring the center of the hip, knee and ankle in a straight line, establishing a neutral mechanical axis (mechanical alignment approach). Alternatively Persona porous CR femoral implants may be used with the Persona 5° cemented tibial trays without a stem extension, the Persona OsseoTi keel tibia, or Persona cemented keel tibia in a Personalized Alignment “(kinematic alignment)” approach. If using the 0° keel tibial trays, the Persona 0° tibial instruments must be used. Additionally the Persona P-ref Sizer 42-5099-40-20, boom 42-5099-

40-30, spiked tibial alignment guide 42-5399-001-20, and uncoupled tibial impactor pad 42-5870-007-21 are optional instruments that may be used for the Personalized Alignment approach. Please consult the Persona Personalized Alignment Total Knee Arthroplasty Surgical Technique for instruction (1578).

Preparation for the Persona PPS Femur and OsseoTi Keel and Cemented Keel Tibias may also include steps from the Persona FuZion™ Instruments Surgical Technique (97-5026-046-00) or Persona Primary Knee: Flexion-First Balancing Instrumentation Technique (2750).

Patient Preparation

To prepare the limb for total knee arthroplasty, adequate muscle relaxation is required. The anesthesiologist should adjust the medication based on the patient’s habitus and weight, and administer to induce adequate muscle paralysis for a minimum of 30-40 minutes. It is imperative that the muscle relaxant be injected prior to inflation of the tourniquet. Alternatively, spinal or epidural anesthesia should produce adequate muscle relaxation. If desired, apply a proximal thigh tourniquet and inflate it with the knee in hyperflexion to maximize that portion of the quadriceps that is below the level of the tourniquet. Once the patient is draped and prepped on the operating table, determine the landmarks for the surgical incision.

Magnet Usage

WARNING: Some instruments in the Persona System contain magnets. All Persona Magnetic Instruments should be kept at a safe distance from a patient’s active implantable medical device(s) (i.e. pacemaker). These types of devices may be adversely affected by magnets. Instruments containing magnets should be kept on an appropriate table or stand when not in use at the surgical site.

Symbols

Symbols have been established for the following:

- Left
- Right
- Varus/Valgus
- Medial/Lateral
- Standard
- Do not implant - Not for implant
- Do not impact
- Inset Only
- Anterior Referencing
- Lock
- Unlock
- Posterior Referencing
- Cemented
- Anterior
- Tibial
- Narrow



Left



Right



Varus/Valgus



Medial/Lateral



Standard



Do not implant -
Not for implant



Do not impact



Inset Only



Anterior Referencing



Lock



Unlock



Posterior Referencing



Cemented



Anterior













Tibial



Narrow

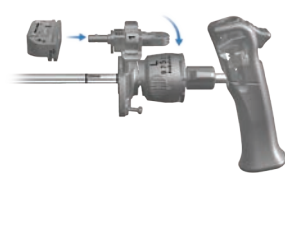
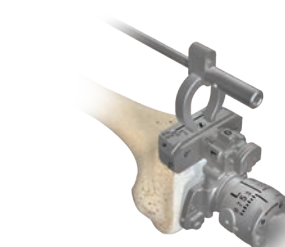

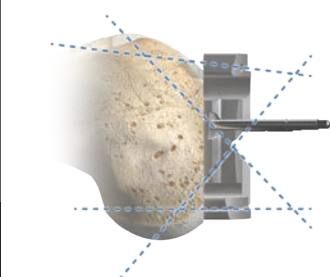
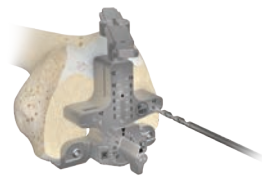
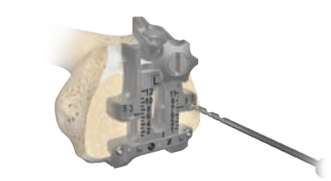




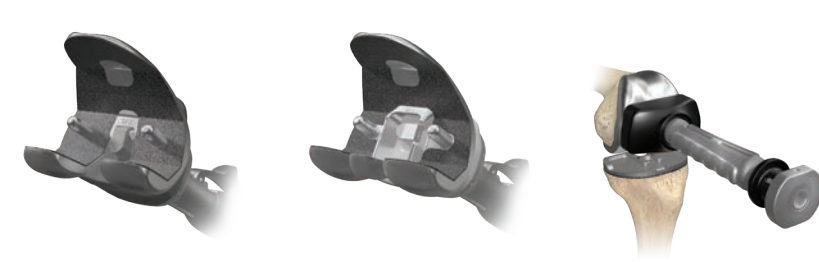
Screw/Pin Information

The chart below contains relevant information on various screws/pins that are compatible with the Persona System. If these screws/pins are used during the procedure for instrument fixation, they should be removed prior to closure as they are NOT implantable.

| Screw/Pin | Screw/Pin Item # | Compatible Driver | Shipped Sterile/ Non-sterile | Quantity per Package | Single use? |
|---|---|---|---------------------------------|-------------------------|-------------|
|  | 25 mm x 2.5 mm Female Hex Screw 42-5099-025-25* |  2.5 mm Male Hex Driver 42-5099-025-00 | Sterile | 2 | Yes |
|  | 75 mm x 3.2 mm Trocar Tipped Drill Pin (2.5 mm hex) 00-5901-020-00 |  Pin/Screw Inserters 00- 5901-021-00 | Sterile | 4 | Yes |
|  | Hex Headed Screw 33 mm long 00-5901-035-33 |  Pin/Screw Inserters 00- 5901-021-00 | Sterile | 2 | Yes |
|  | MIS Quad-Spacing Total Knee Headed Screw 48 mm long 00-5983-040-48 |  Screw Inserters/Extractors 00-5983-049-00 | Sterile | 1 | Yes |
|  | 25 mm Shorthead Holding Pin 00-5977-056-03 |  Multi Pin Puller 00-5901-022-00 | Non-Sterile | 1 | No |

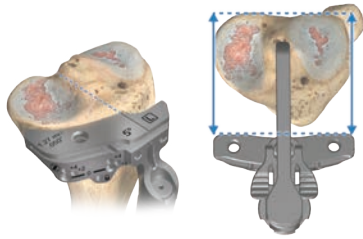
* The 2.5 mm female hex screws and 2.5 mm male hex driver should not be used in cortical bone, as this may increase the incidence of stripping of the driver.

Femoral Quick Reference Technique

| | | |
|---|--|---|
| <h3>Step 1 Resect Distal Femur</h3> | | |
|  |  |  |
| Assemble Alignment Guide | Establish Femoral Alignment | Resect Distal Femur |
| <h3>Step 2 Femoral Sizing</h3> | | <h3>Step 3 Femoral A/P and Chamfer Resections</h3>  |
|  |  | |
| Posterior Referencing | Anterior Referencing | |
| <h3>Step 4 Femoral Finishing</h3> | | |
|  |  |  |
| CR Femoral Finishing | PS Box Preparation | PS Femoral Finishing |
| <h3>Trial Assessment</h3>  | <h3>Femoral Implantation</h3>  | |

Tibia Quick Reference Technique

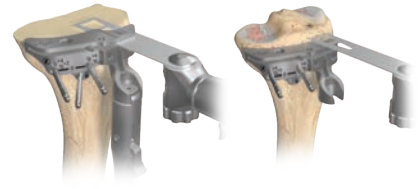
Step 1 Resect Proximal Tibia



Position the Alignment Guide



Set Resection Depth



Proximal Tibia Resection

Step 2 Tibial Sizing



Step 3 Tibial Drilling



Optional Keel Drill



Peg Drilling (Porous Only)

Step 4 Tibial Broaching





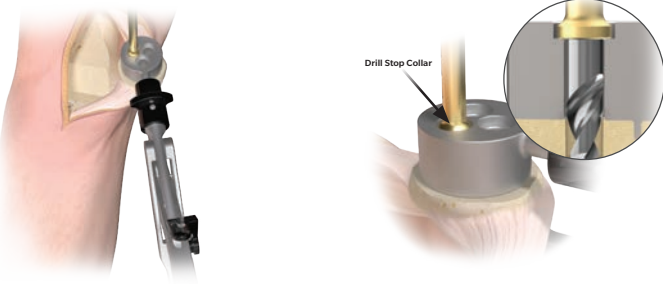

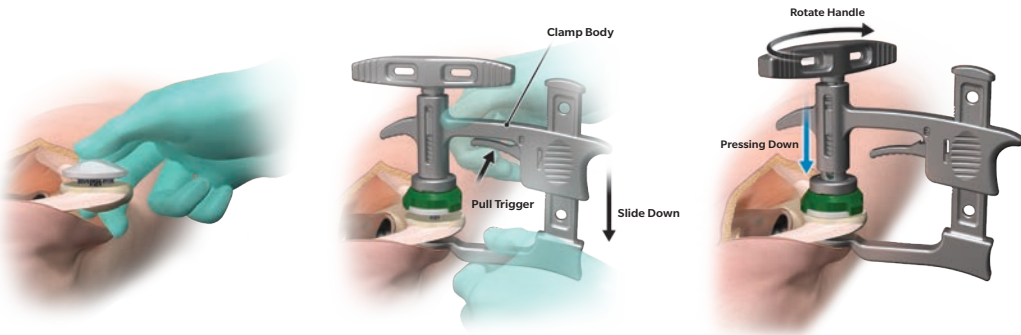
Trial Assessment



Tibial Implantation



Patella Quick Reference Technique

| | |
|--|--|
| <p>Step 1 Patella Resection</p>  | <p>Step 2 Patella Sizing</p>  |
| <p>Step 3 Peg Preparation</p>  | <p>Step 4 Trial Reduction</p>  |
| <p>Patella Implantation</p>  | |

Femoral Preparation

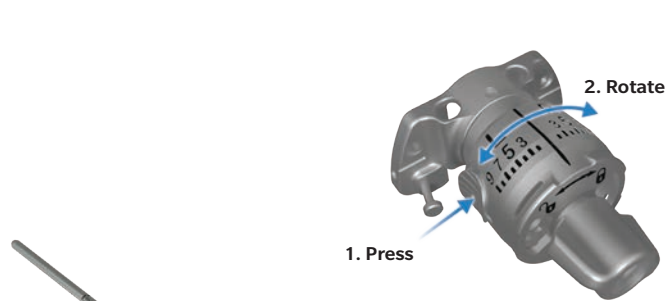


Figure 2



Figure 3

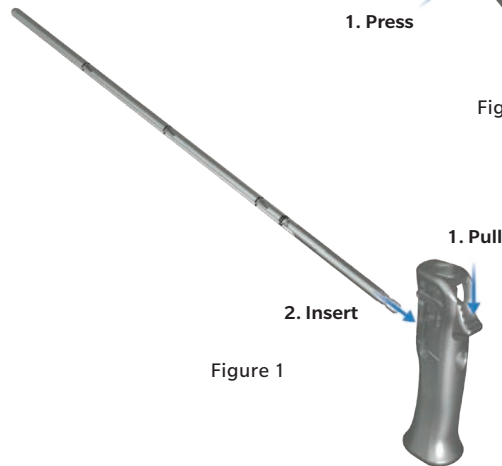


Figure 1

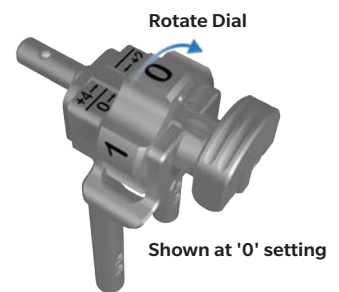


Figure 4

Step 1 Resect Distal Femur

Assemble Extramedullary (EM) Alignment Guide

Pull the lever on the modular handle and insert the IM rod (Figure 1). Orientation of the IM rod will align with the polished line on the sides of the modular handle.

ⓘ Technique Tip: Alternately, the IM rod may be inserted into the top of the modular handle to accommodate surgical preference.

Set the valgus angle on the adjustable valgus guide by pressing the button and rotating the dial to the appropriate left or right valgus angle from 0 degrees to 9 degrees (Figure 2).

Avoid turning the locking knob excessively in the counterclockwise, or “unlocking”, direction to prevent it from binding.

Insert the IM rod into the adjustable valgus guide.

ⓘ Note: If desired, align the depth markings on the IM rod with the flat plate of the adjustable valgus guide to set the IM rod at a specific length. Inserting the IM rod beyond the double line marking, indicated with caution symbols, may prevent assembly of the modular handle to the IM rod (Figure 3).

Set the resection depth on the adjustable resection tower by rotating the dial (Figure 4). The ‘0’ setting indicates a 10 mm resection. Adjustments can be made in 1 mm increments from 10 mm to 14 mm.





| Persona 8 mm IM Rod | Persona Modular Handle | Persona Valgus Alignment Guide | Persona Adjustable Resection Tower |
|---|---|---|---|
| 42-5099-002-00 | 42-5099-014-00 | 42-5099-004-00 | 42-5099-008-00 |
|  |  |  |  |



Figure 5

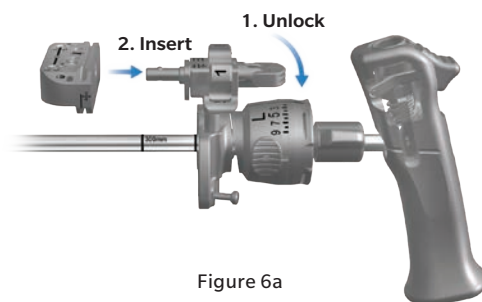


Figure 6a

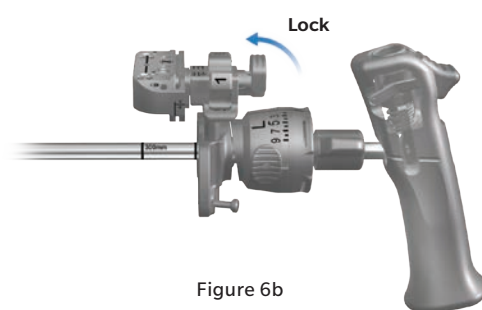


Figure 6b

ⓘ **Note:** The ‘0’ setting can be set to indicate a 1 mm through 9 mm resection depth, in 1 mm increments, by assembling the corresponding resection plate to the valgus guide. Figure 5 illustrates this with the 9 mm resection plate. The 9 mm and 8 mm resection plates may facilitate correction of recurvatum and the 1 mm–3 mm resection plates can be used for recutting the distal femur, if needed.


The size 1 and 2 femoral components are 1 mm thinner distally than sizes 3-12. Consider adjusting the resection depth on these sizes to accommodate for this difference.

ⓘ **Technique Tip:** If it is possible that the femoral component may be a size 1 or 2, then consider cutting the distal resection for a size 1 or 2. If the size of the femur is later determined to be 3-12, then the additional bone cut can be made using the 1 mm resection plate.

Insert the adjustable resection tower into the adjustable valgus guide.

Rotate the lock lever on the adjustable resection tower to the unlocked, or “in-line”, position and fully insert into the cut guide (Figure 6a). Flip the lock lever to the locked, or “vertical”, position to secure it to the cut guide (Figure 6b).

ⓘ **Technique Tip:** The adjustable resection tower is compatible with the fixed valgus guide and the fixed resection tower is compatible with the adjustable valgus guide. These instruments can be interchanged to accommodate surgical preference.

| Persona 8 mm IM Rod | Persona Modular Handle | Persona Valgus Alignment Guide | Persona Adjustable Resection Tower | Persona 0° Distal Cut Guide | Persona 9 mm Distal Resection Plate |
|---|---|---|---|--|---|
| 42-5099-002-00 | 42-5099-014-00 | 42-5099-004-00 | 42-5099-008-00 | 42-5099-010-00 | 42-5099-015-09 |
|  |  |  |  |  |  |

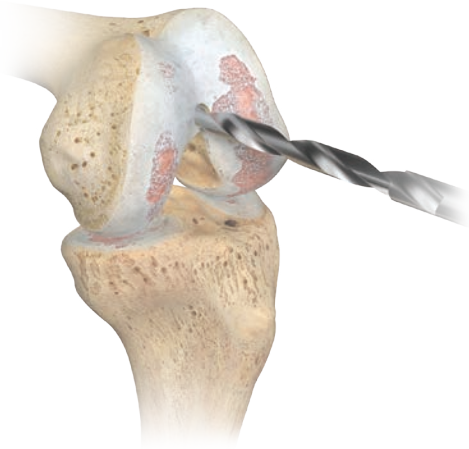


Figure 7

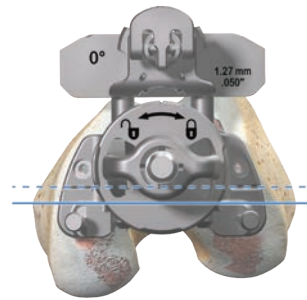


Figure 8a

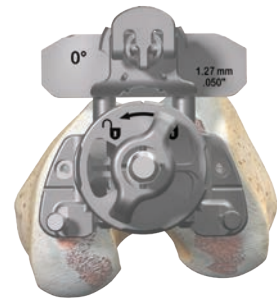


Figure 8b

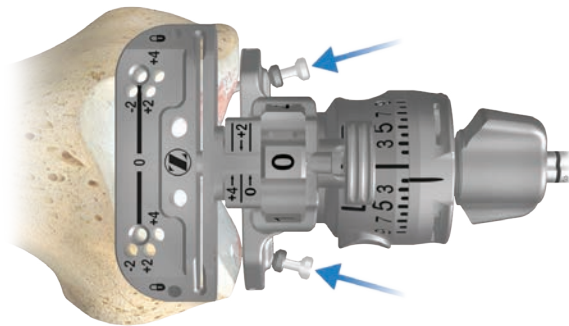


Figure 9

Establish Femoral Alignment

Drill the IM canal using the 8 mm IM step drill (Figure 7). Suction the canal to remove medullary contents.

Insert the IM rod and assembled distal resection instrumentation into the IM canal far enough to ensure the most accurate replication of the anatomic axis.

Set the orientation of the adjustable valgus guide by placing it against the most prominent distal condyle and rotating it about the IM rod so that the engraved lines are aligned with the epicondylar axis (Figure 8a).

Turn the lock knob on the adjustable valgus guide clockwise, to the locked position, to secure orientation of the assembly (Figure 8b).

Note: Setting rotation of the adjustable valgus guide is important for creating a distal resection that matches the desired valgus angle selected. It does not set the rotation of the femoral component.

For additional fixation, or in lieu of using the lock knob, impact the captured pin on the medial or lateral side of the adjustable valgus guide until the head of the captured pin is flush with the plate (Figure 9).

| 8 mm IM Step Drill | Persona 8 mm IM Rod | Persona Modular Handle | Persona Valgus Alignment Guide | Persona Adjustable Resection Tower | Persona 0° Distal Cut Guide |
|---|---|---|---|--|---|
| 00-5978-014-00 | 42-5099-002-00 | 42-5099-014-00 | 42-5099-004-00 | 42-5099-008-00 | 42-5099-010-00 |
|  |  |  |  |  |  |

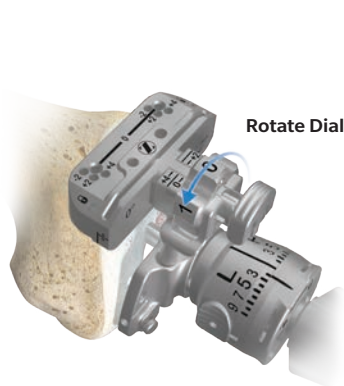


Figure 10

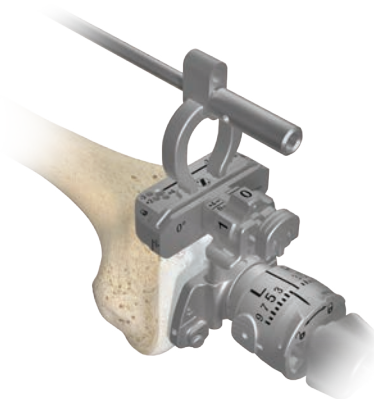


Figure 11

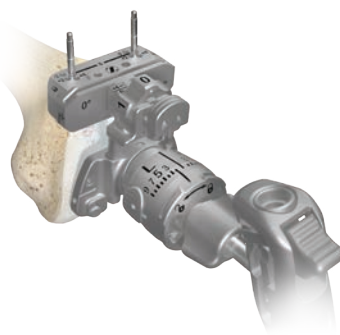


Figure 12

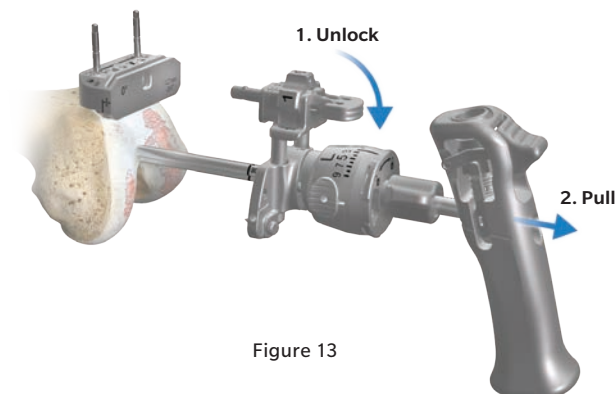


Figure 13

Resect Distal Femur

Verify the adjustable valgus guide is set to the proper side (left or right) and angle and that the adjustable resection tower is set to the appropriate depth.

Technique Tip: If unsure of the adjustable resection tower depth setting, rotate the dial clockwise until a “click” is felt. This occurs when the dial moves from the ‘4’ setting to the ‘0’ setting. The bold ‘0’ will be visible on the dial and the line will be aligned with the ‘0’ mark along the shaft (Figure 10).

Technique Tip: Confirm valgus alignment by inserting the drop rod adapter into the large holes on the anterior face of the cut guide and insert an alignment rod into the drop rod adapter (Figure 11).

Insert a trocar tipped pin through each of the standard pin holes marked ‘0’ on the anterior surface of the cut guide (Figure 12).

Flip the lock lever on the adjustable resection tower to the unlocked, or “in-line”, position and pull the handle to remove the IM rod and assembled distal resection instrumentation leaving only the cut guide attached to the femur (Figure 13).

Note: If the captured pin was deployed it may be necessary to first remove it from the bone using the pin puller. Alternatively, removing the IM rod from the adjustable valgus guide may facilitate removal of the captured pin from the bone.










| Persona 8 mm IM Rod | Persona Modular Handle | Persona Valgus Alignment Guide | Persona Adjustable Resection Tower | Persona 0° Distal Cut Guide | Persona Drop Rod Adapter |
|---|---|---|---|---|---|
| 42-5099-002-00 | 42-5099-014-00 | 42-5099-004-00 | 42-5099-008-00 | 42-5099-010-00 | 42-5399-006-00 |
|  |  |  |  |  |  |
| Alignment Rod with Coupler | 3.2 mm x 75 mm Trocar Tipped Drill Pin (2.5 mm hex) | Pin Screw Inserter | | | |
| 00-5785-080-00 | 00-5901-020-00 | 00-5901-021-00 | | | |
|  |  |  | | | |



Figure 14



Figure 15a



Figure 15b

ⓘ Technique Tip: Additional 2 mm adjustments may be made by using the sets of holes marked -2, +2, and +4. These sets of holes indicate, in millimeters, the amount of additional bone resection each will yield relative to the resection setting on the resection tower (where '0' represents 10 mm. However, if the 9 mm resection plate is used, the '0' represents 9 mm).

Insert the resection guide into the cut slot of the cut guide to verify the depth of resection.

Insert a trocar tipped pin through at least one of the locking, or oblique, pin holes in the cut guide to further secure the cut guide to the femur (Figure 14).






Using a 1.27 mm (0.050 inch) oscillating saw blade through the cut slot in the cut guide, resect the distal femur.

ⓘ Note: The flatness of all femoral resections is critical to ensuring adequate contact between the porous femoral implant and the bone. If using a porous femoral implant, evaluate the flatness of the resection prior to sizing and modify the cut as necessary so that it is completely flat.

Remove all pins and the cut guide.

Optional Cutting Technique

If desired, the bone resection can be made from the top (most distal) surface of the cut guide (Figure 15a). The top surface of the cut guide is 4 mm from the cut slot. Therefore, if cutting from the top surface, the position of the cut guide must be adjusted by moving the cut guide from the trocar tipped pins through the '0' holes and reinserting the cut guide onto the trocar tipped pins through the holes marked '+4' (Figure 15b). Insert a trocar tipped pin through at least one of the locking, or oblique, pin holes in the cut guide to further secure the cut guide to the femur prior to cutting the femur.

| Persona 0° Distal Cut Guide | 3.2 mm x 75 mm Trocar Tipped Drill Pin (2.5 mm hex) | Resection Guide | Pin Screw Inserter | Multi Pin Puller |
|---|---|---|---|---|
| 42-5099-010-00 | 00-5901-020-00 | 00-5977-084-00 | 00-5901-021-00 | 00-5901-022-00 |
|  |  |  |  |  |

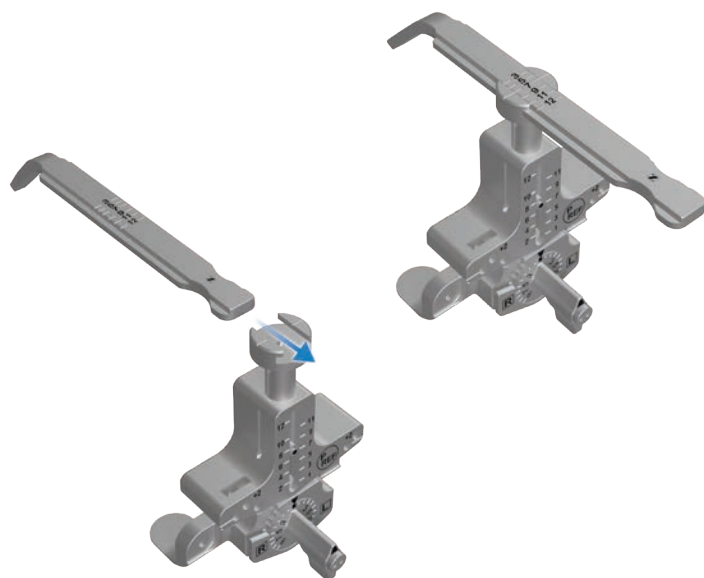


Figure 16

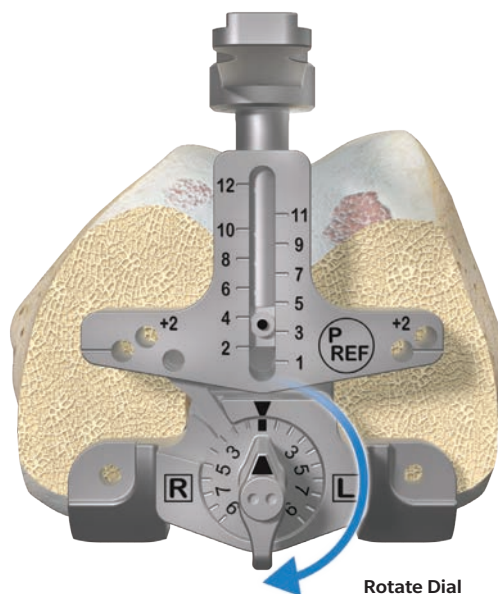


Figure 17

Step 2 Femoral Sizing – Posterior Referencing

Assemble the posterior referencing sizer boom with the posterior referencing sizer (Figure 16).

Establish the initial external rotation setting by holding the sizer in one hand and turning the dial with the opposite hand toward the “L” or “R” (Figure 17). Turn to desired setting with the arrow on the dial pointing to “L” for a left knee or “R” for a right knee.

External rotation can be set from 0 to 9 degrees, left or right.

ⓘ Technique Tip: Prior to sizing the femur remove any osteophytes that interfere with instrument positioning.

Apply the sizer so that the flat surface of the sizer is flush against the resected surface of the distal femur and the feet of the sizer are flush against the posterior condyles. Center the sizer mediolaterally. After positioning the sizer, the external rotational setting can be verified or adjusted.

Persona Posterior Referencing Sizer
42-5099-040-20



Persona Posterior Referencing Sizer Boom
42-5099-040-30



Pin Screw Insertor
00-5901-021-00



Resection Guide
00-5977-084-00



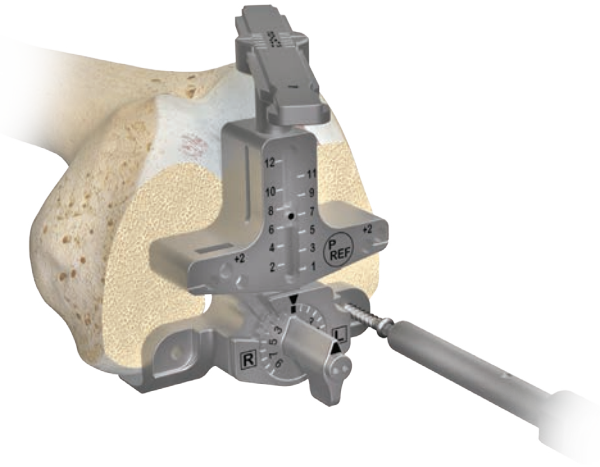


Figure 18



Figure 19

Optional Fixation Method for Sizer

If necessary, secure the sizer to the femur while holding the guide in place using 25 mm x 2.5 mm screws (Figure 18) in one or both of the holes on the lower portion of the guide to help draw the sizer adjacent to the distal femur, particularly in MIS situations. Use of 48 mm screws in the region is not recommended due to potential perforation through the posterior femoral condyles.

ⓘ Technique Tip: Do not impact the sizer onto the femur.

Size Determination

Slightly extend the knee and retract soft tissues to expose the anterior femoral cortex. Clear any soft tissue from the anterior cortex. Ensure that the leg is in less than 90 degrees of flexion (70-80 degrees). This will decrease the tension of the patellar tendon to facilitate placement of the sizing boom. The position of the boom tip approximates the proximal position of the anterior flange of the femoral component.

ⓘ Technique Tip: Positioning the sizing boom tip on the “high” part of the femur by lateralizing the location of the sizing boom tip can often lessen the likelihood of notching the femur.

After the sizing boom is appropriately positioned, read the femoral size directly from the sizer. There are 12 sizes labeled 1 through 12.

The same size markings are present on the anterior surface of the sizing boom and approximate the proximal position of the anterior flange of the femoral component when telescoped to the same size that has been determined by the vertical A/P sizing tower (Figure 19).

Persona Posterior
Referencing Sizer
42-5099-040-20



Persona Posterior Referencing
Sizer Boom
42-5099-040-30



2.5 mm Male Hex Driver
42-5099-025-00



25 mm x 2.5mm Female
Hex Screw
42-5099-025-00



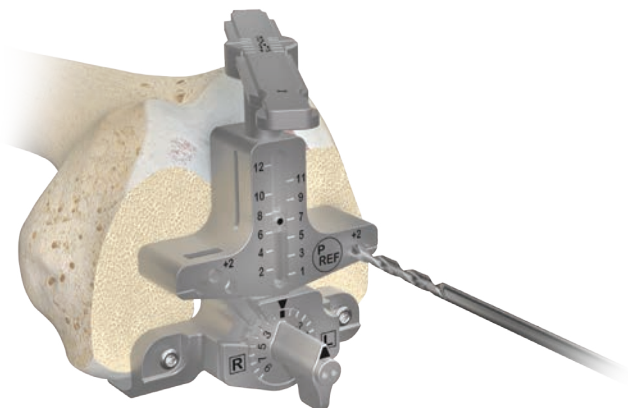


Figure 20

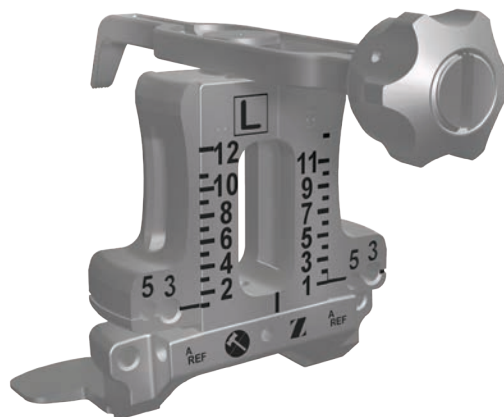


Figure 21

The holes in the midline of the A/P portion of the sizer are used to drill 3.2 mm holes for pegs on the posterior referencing 4-in-1 femoral cut guides. Drill through the Persona Posterior Referencing Sizer's holes while being careful not to disturb the position of the sizer during drilling (Figure 20).

If the size indicated is between component sizes, the +2 holes may be utilized in combination to downsizing to the next smaller component size. This is accomplished by shifting the femoral component position 2 mm anteriorly (+2 holes) increasing the posterior condylar resection by 2 mm and increasing the flexion gap.

ⓘ Technique Tip: This posterior referencing sizer works only with the posterior referencing 4-in-1 femoral cut guides.

Step 2 Femoral Sizing – Anterior Referencing

Rotate the feet of the anterior referencing femoral sizing guide so the appropriate “Left” or “Right” markings are visible as the femoral sizing guide is placed on the bone (Figure 21). External rotation can be set at 3 degrees or 5 degrees from the posterior condylar axis.

ⓘ Technique Tip: Remove any osteophytes that interfere with instrument positioning.

Apply the sizer so that the flat surface of the sizer is flush against the resected surface of the distal femur and the feet of the sizer are flush against the posterior condyles. Center the sizer mediolaterally. Both the vertical and horizontal portions of the sizer provide visual cues relative to the A/P and epicondylar axes of the femur to help ensure that desired external rotation is attained.

Persona Posterior Referencing Sizer
42-5099-040-20



Persona Posterior Referencing Sizer Boom
42-5099-040-30



25 mm x 2.5mm Female Hex Screw
42-5099-025-00



3.2 mm Drill
00-5120-085-00



Persona Anterior Referencing Sizer
42-5099-088-10



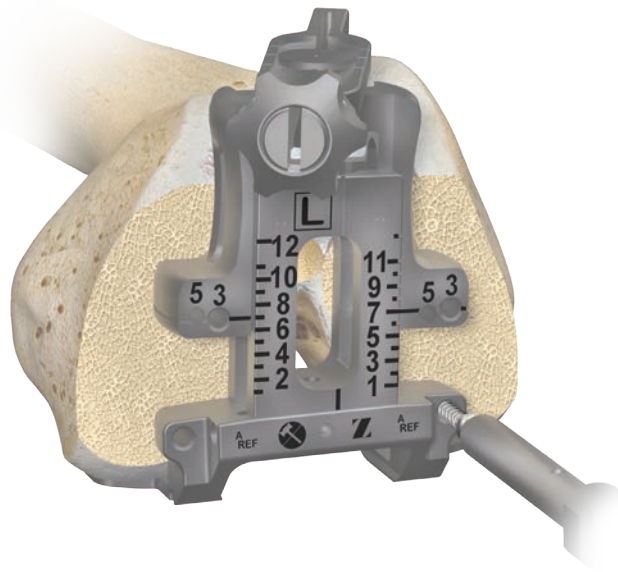


Figure 22

ⓘ **Note:** Sizer geometry is rotated 3 degrees to align to the A/P and epicondylar axes of the femur. The 3 degrees drill holes are rotated 3 degrees from the posterior feet and are neutral to the central sizer geometry. This enables use of the A/P and epicondylar axis to set rotation.

If the 3 degrees external rotation holes are to be used to set external rotation, the etched line on the sizer should be positioned so it is in line with Whiteside's line (Figure 22) to optimize the M/L position of the drill holes for subsequent 4-in-1 cut guide placement. If the 5 degrees external rotation holes are to be used, the sizer can be positioned with the etched line on the sizer 4 mm laterally from Whiteside's line to better center the drill holes for subsequent 4-in-1 cut guide placement, due to the M/L offset of the holes.

Hold the guide in place and if necessary, secure the sizer to the femur using 25 mm x 2.5 mm female hex screws (Figure 22) in one or both of the holes on the lower portion of the guide to help draw the sizer adjacent to the distal femur, particularly in MIS situations.

ⓘ **Note:** Do NOT use 48 mm screws for fixation of the anterior reference sizer. 48 mm screws are not recommended due to potential bone perforation.

ⓘ **Technique Tip:** Do not impact the sizer onto the femur.

Persona Anterior
Referencing Sizer
42-5099-088-10



2.5 mm Male Hex Driver
42-5099-025-00



25 mm x 2.5mm Female Hex
Screw
42-5099-025-00



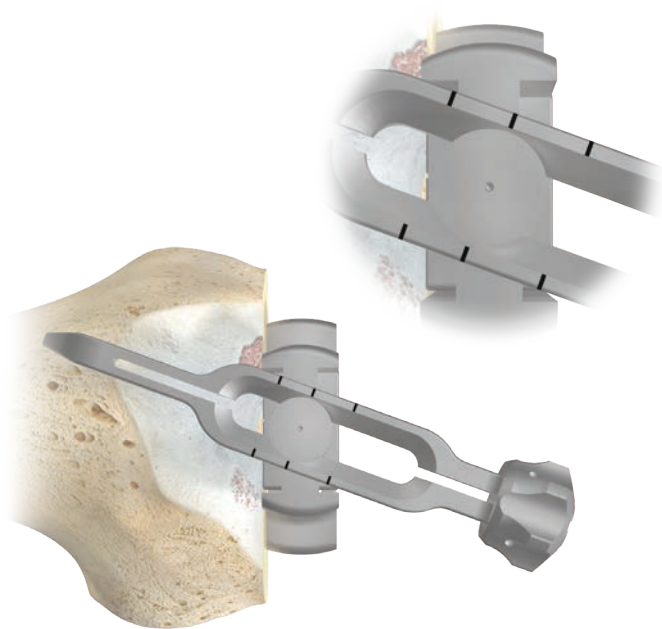


Figure 23a

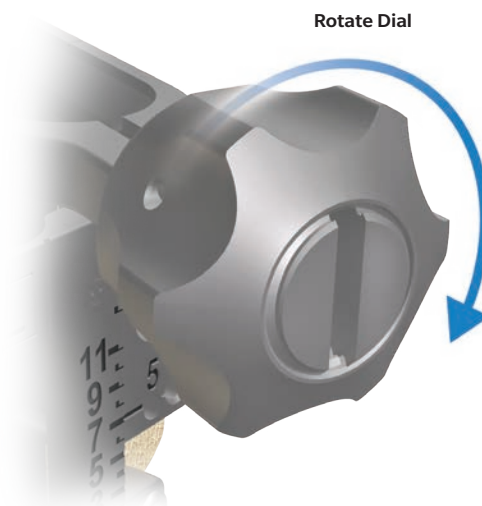


Figure 23b

Size Determination

Slightly extend the knee and retract soft tissues to expose the anterior femoral cortex. Clear any soft tissue from the anterior cortex. Ensure that the leg is in less than 90 degrees of flexion (70 degrees– 80 degrees). This will decrease the tension of the patellar tendon to facilitate placement of the sizing boom. The sizing boom telescopes proximally/distally to facilitate optimal placement along the anterior cortex. The engraved lines along the top of the boom approximate the anterior flange lengths of the size 1, 7, and 12 femoral components (Figure 23a). Once the sizing boom is appropriately positioned, it should be locked in place by tightening the knob at the end of the boom clockwise (Figure 23b).

- ☰ **Technique Tip:** Lock boom after positioning to reduce the toggle of the boom tip. This will also reduce the risk of notching.
- ☰ **Technique Tip:** Positioning the sizing boom tip on the “high” part of the femur by lateralizing the location of the sizing boom tip can often lessen the likelihood of notching the femur.
- ☰ **Technique Tip:** To size accurately, the sizing boom should be telescoped to the size read from the tower. If the boom is telescoped to the exact size, the tip of the boom will approximate the exit point of the saw blade through the anterior cortex.



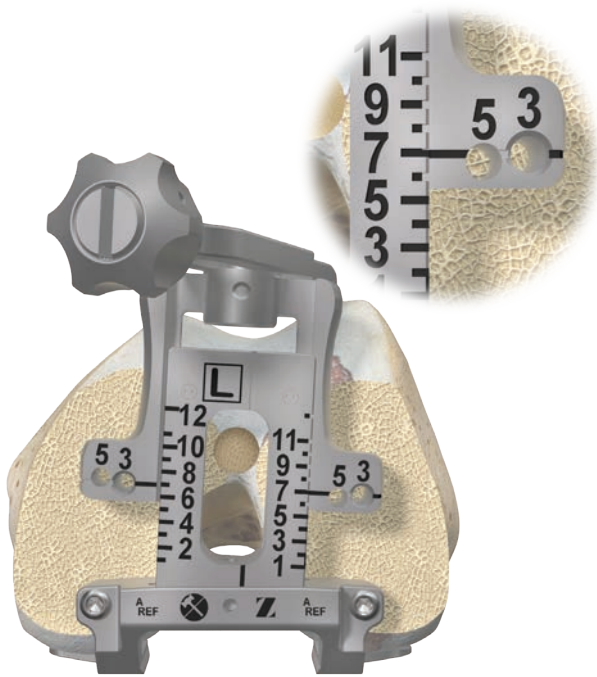


Figure 24

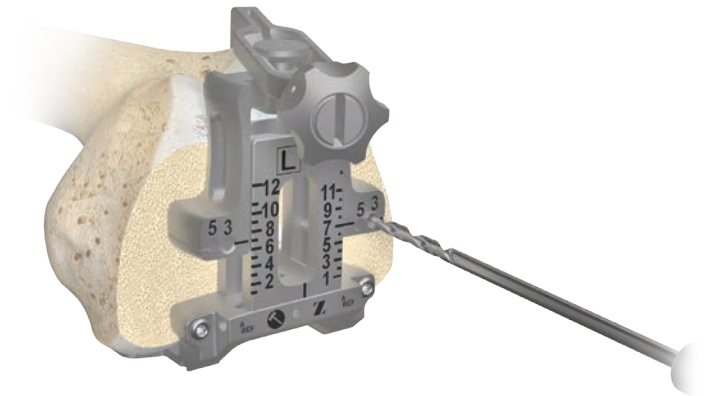


Figure 25

After the sizer is appropriately positioned on the femur, read the femoral size from the engraved lines on the sizer tower and select the closest size (Figure 24). There are six even sizes labeled on the left side of the tower and six odd sizes labeled on the right side of the tower, with lines indicating the in-between sizes. The 3 degrees or 5 degrees holes in the midline of the A/P portion of the sizer are used to drill 3.2 mm holes for pegs on the anterior referencing 4-in-1 femoral cut guide (Figure 25). A 3.2 mm pin may be placed in the first drilled hole to maintain an “index” position prior to drilling the second hole. Remove the screws, then remove the sizer.

☰ **Technique Tip:** This anterior referencing sizer works only with the anterior referencing 4-in-1 femoral cut guides.

☰ **Technique Tip:** If the femoral size is determined to be a size 3 or bigger but was prepared for a size 1 or 2, consider cutting additional distal bone using the 1 mm resection plate.

**Persona Anterior
Referencing Sizer**
42-5099-088-10



**25 mm x 2.5mm Female Hex
Screw**
42-5099-025-00



3.2 mm Drill
00-5120-085-00



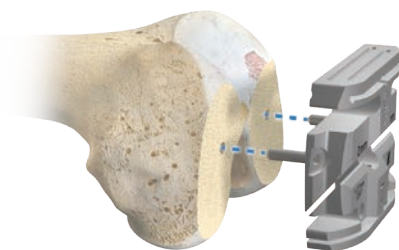


Figure 26

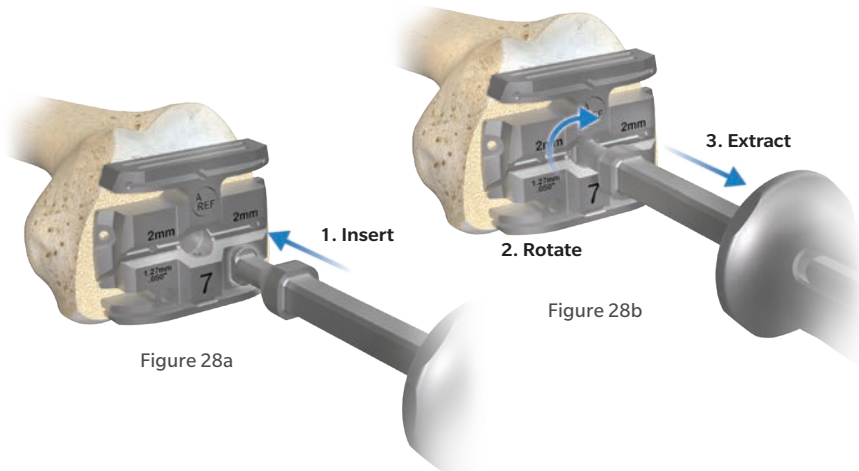


Figure 28a

Figure 28b



Figure 27



Figure 29a

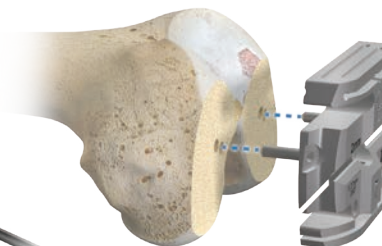


Figure 29b

Step 3 Femoral A/P and Chamfer Resections

By hand, place the appropriate anterior referencing or posterior referencing 4-in-1 cut guide on the femur by aligning the two pegs on the back of the guide with the previously drilled positioning holes (Figure 26).

Impact the face of the guide until the guide is flush with the femur. Place the resection guide through the anterior slot of the cut guide to ensure the desired anterior resection (Figure 27).

If there is a risk of unacceptable notching the anterior cortex, use the slaphammer to axially remove the cut guide (Figures 28a & 28b). Place the next larger sized femoral cut guide on the femur and recheck the anterior resection level with the resection guide.

If the posterior resection is insufficient/tight flexion, the cut guide can be shifted 2 mm anteriorly by drilling through the two holes marked “↑ 2 mm”. Remove the original cut guide, and place the next smaller sized femoral cut guide into the “anteriorized” holes in the femur (Figures 29a & 29b). Downsizing in combination with the anterior shift will leave the anterior resection level unaltered. Verify the final resection levels using the resection guide.

Technique Tip: If the 2 mm shift holes are to be used, assure that the desired holes on the distal femur are used. The resection guide can be used as final verification of the anticipated anterior and posterior resections.

**Persona Anterior Referencing
4-in-1 Cut Guide – Size 7**
42-5099-085-62



Persona Slaphammer
42-5099-037-00



3.2 mm Drill
00-5120-085-00



Resection Guide
00-5977-084-00





Figure 30

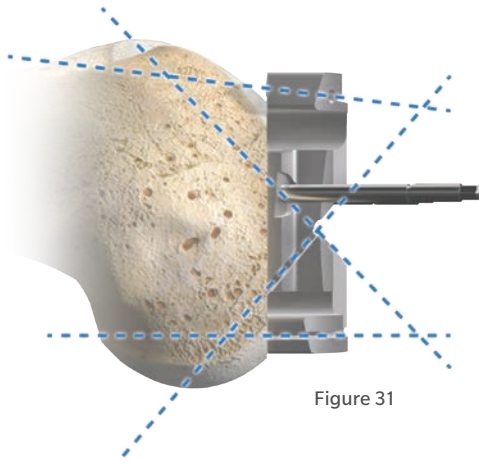


Figure 31

After final placement of the desired 4-in-1 cut guide, insert 3.2 mm trocar tipped pins or 3.2 mm headed screws (see Screw/Pin Information Section for examples) through the oblique holes in the 4-in-1 cut guide (Figure 30).

ⓘ Technique Tip: It is not recommended that the following headed screws are used through the oblique holes of the posterior referencing 4-in-1 cut guides, as the head of the screw may interfere with the saw blade: 00-5791-041-00, 00-5791-043-00, 00-5791-044-00, 00-5061-063-00.

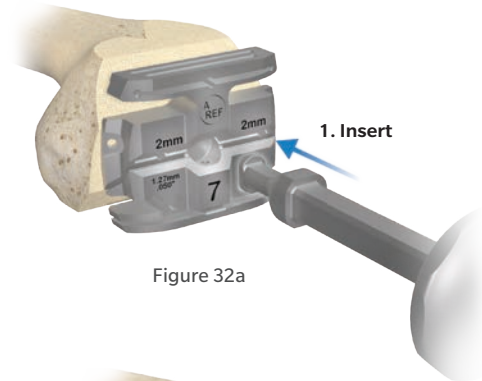


Figure 32a

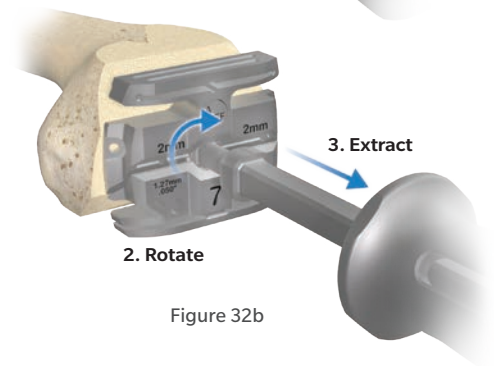


Figure 32b

Use a 1.27 mm (.050 in.) thick oscillating saw blade to complete the anterior, posterior, posterior chamfer, and anterior chamfer resections through the cut slots (Figure 31). Upon completion of the cuts, use the multi pin puller or pin/screw inserter to remove the oblique pins. Use the Persona slaphammer to remove the cut guide from the femur. Insert slaphammer and rotate 1/4 turn clockwise to engage the locking feature extract (Figures 32a & 32b).

ⓘ Technique Tip: When completing the femoral resections using the posterior referencing 4-in-1 cut blocks, complete them in the following order for the greatest 4-in-1 cut guide stability and to ensure additional posterior chamfer gap is not created when downsizing: perform anterior and posterior resections, reassess AP sizing, perform the additional anterior resection if needed plus both anterior and posterior chamfer resections.

**Persona Anterior Referencing
 4-in-1 Cut Guide – Size 7**
 42-5099-085-62



Persona Slaphammer
 42-5099-037-00



**3.2 mm x 75 mm Trocar Tipped
 Drill Pin (2.5 mm hex)**
 00-5901-020-00



Pin Screw Inserter
 00-5901-021-00



Multi Pin Puller
 00-5901-022-00



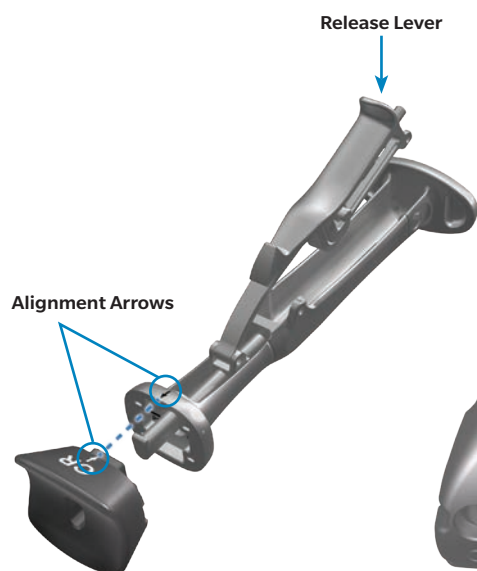


Figure 33



Figure 34



Figure 35

Step 4 CR Femoral Finishing

ⓘ Technique Tip: Reference the orientation and size etched and/or engraved markings to identify the correct provisional.

Assemble the femoral CR impactor pad to the femoral inserter/extractor. Hold the femoral inserter/extractor with the handle in the open position and insert the femoral CR impactor pad, aligning the “CR” on the femoral CR impactor pad with the arrow on the femoral inserter/extractor (Figure 33). The femoral CR impactor pad is keyed, so the femoral CR impactor pad may have to be rotated while placing and aligning the femoral CR impactor pad onto the femoral inserter/extractor.

Femoral sizes 3 through 11 are provided in two profiles, standard and narrow. The size 3 through 11 standard femoral provisionals have intermittent cutouts around the periphery, with the inner dimension representing the outer profile of the narrow femoral implant and the outer dimension representing the outer profile of the standard femoral implant (Figure 34).

Femoral sizes 1 and 2 are provided in one profile, narrow; and femoral size 12 provided in one profile, standard. Thus the size 1, 2 and 12 femoral provisionals do not have intermittent cutouts. Care should be taken to use the appropriate standard or narrow implant as is related to side (left or right) and size based on the provisional fit and ROM provided during the trialing phase.

ⓘ Technique Tip: Do not impact the anterior flange of the CR femoral provisional. Do not impact the medial or lateral aspects or the release lever of the femoral inserter/extractor.

Remove any posterior osteophytes or overhanging bone on the femur to facilitate maximum knee flexion. Attach the femoral inserter/extractor to the correct CR femoral provisional by inserting the hook on the femoral inserter/extractor arm into the anterior notch in the CR femoral provisional and close the handle on the femoral inserter/extractor to secure the CR femoral provisional (Figure 35).

**Persona Femoral Inserter/
Extractor**
42-5099-092-00



**Persona Femoral CR
Impactor Pad**
42-5099-094-00



**Persona CR Femoral
Provisional Size 7 Left**
42-5027-062-01



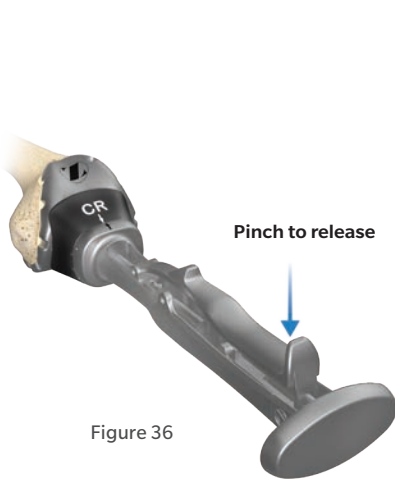


Figure 36



Figure 37

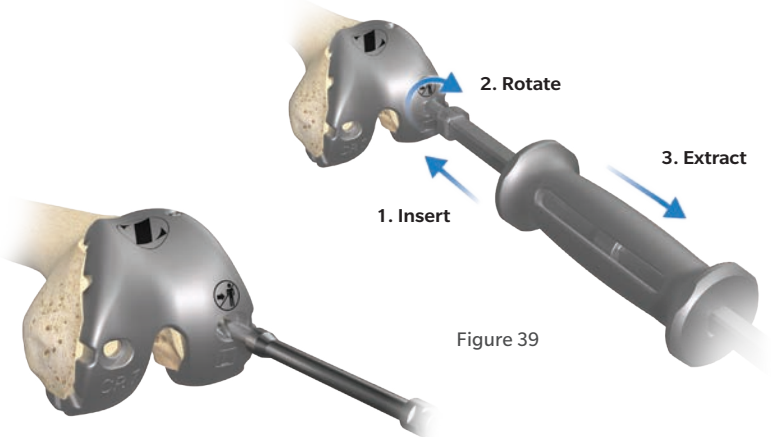


Figure 38

Place the correct CR femoral provisional onto the femur in the desired medial/lateral position. Impact the end of the femoral inserter/extractor handle to fully seat the CR femoral provisional onto the femur (Figure 36). To remove the femoral inserter/extractor from the CR femoral provisional, pinch the release lever while pulling out/down (Figure 36). Alternatively, if the CR femoral provisional is placed on the femur by hand, the femoral inserter/extractor handle must be in the closed and locked position prior to engaging the CR femoral provisional. Then the femoral inserter/extractor can be used to impact the provisional onto the femur. For additional fixation of the fully seated provisional, insert the 25 mm x 3.2 mm screw (2.5 mm female hex) with the 2.5 mm male hex driver through the hole in the lateral anterior flange of the CR femoral provisional (Figure 37).

ⓘ **Technique Tip:** Ensure the shoulder of drill is seated at bottom of the femoral provisional counterbore.

If the tibia has been prepared, a trial range of motion can be performed to assure proper positioning of the CR femoral provisional prior to femoral peg hole preparation. Once desired medial-lateral placement has been attained, drill the peg holes for size 3 through 12 femoral implants through the CR femoral provisional

with the NexGen 6.4 mm Patella/Femoral Drill (Figure 38). For size 1 and 2 femoral implants use the NexGen 4.4 mm Femoral Peg Drill. If a screw was used to provide adjunct fixation, remove the screw from the anterior flange in the CR femoral provisional. The slaphammer can be used to remove size 3 through 12 CR femoral provisionals (Figure 39). Rotate the slaphammer a ¼ turn outward. For size 1 and 2 CR femoral provisionals the slaphammer can be inserted into the notch on the medial or lateral side of the provisional. Alternatively, the femoral inserter/extractor can be reattached to the CR femoral provisional to remove it from the bone. If necessary, place the round end of the slaphammer in the extraction hole of the femoral inserter/extractor to facilitate removal.

ⓘ **Technique Tip:** Ensure oval hole of the femoral provisional is free of debris prior to inserting slaphammer.

ⓘ **Technique Tip:** If trialing with TASP leave femoral provisional in place until trialing is complete.

ⓘ **Technique Tip:** Do not impact the anterior flange of the CR femoral provisional for removal, as this may damage the CR femoral provisional.

| | | | | | | |
|---|---|---|---|--|---|---|
| Persona Femoral Inserter/Extractor 42-5099-092-00 | Persona Femoral CR Impactor Pad 42-5099-094-00 | Persona CR Femoral Provisional Size 7 Left 42-5027-062-01 | 2.5 mm Male Hex Driver 42-5099-025-00 | 25 mm x 2.5mm Female Hex Screw 42-5099-025-00 | Persona Slaphammer 42-5099-037-00 | NexGen 6.4 mm Patella/ Femoral Drill 00-5120-052-01 |
|  |  |  |  |  |  |  |

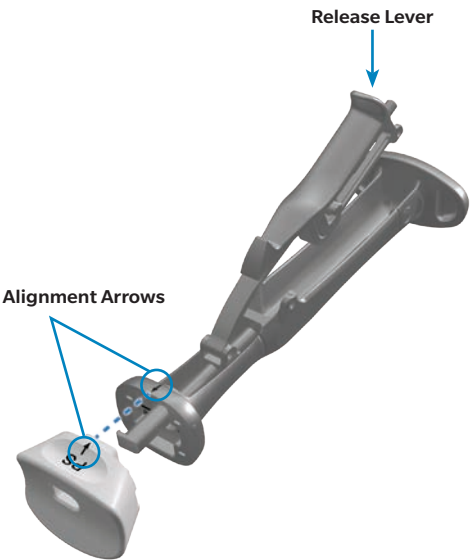


Figure 40



Figure 41




Step 4 PS Femoral Finishing and Box Preparation

Technique Tip: Reference the orientation and size etched and/or engraved markings to identify the correct provisional.

Assemble the femoral PS impactor pad to the femoral inserter/extractor. Hold the femoral inserter/extractor, with the handle in the open position and insert the femoral PS impactor pad, aligning the “PS” on the femoral PS impactor pad with the arrow on the femoral inserter/extractor (Figure 40).

The femoral PS impactor pad is keyed, so the femoral PS impactor pad may have to be rotated while placing and aligning the femoral PS impactor pad onto the femoral inserter/extractor.

Femoral sizes 3 through 11 are provided in two profiles, standard and narrow. The size 3 through 11 standard femoral provisionals have intermittent cutouts around the periphery, with the inner dimension representing the outer profile of the narrow femoral implant and the outer dimension representing the outer profile of the standard femoral implant (Figure 41). Femoral sizes 1 and 2 are provided in one profile, narrow; and femoral size 12 provided in one profile, standard. Thus the size 1, 2, and 12 femoral provisionals do not have intermittent cutouts. Care should be taken to use the appropriate standard or narrow implant as is related to side (left or right) and size based on the provisional fit and ROM provided during the trialing phase.

| Persona Femoral Inserter/Extractor | Persona Femoral PS Impactor Pad | Persona PS-CPS Femoral Provisional Size 7 Left |
|---|---|---|
| 42-5099-092-00 | 42-5099-093-00 | 42-5047-062-01 |
|  |  |  |

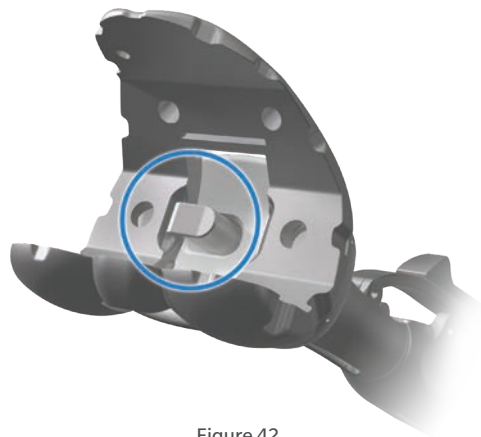


Figure 42

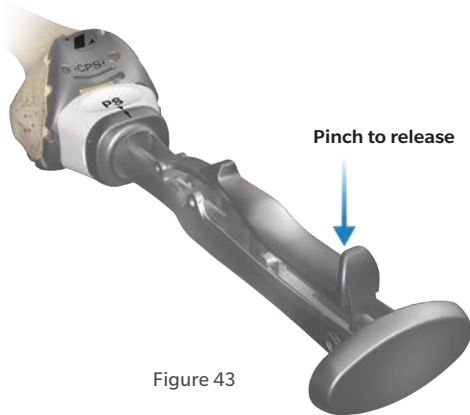


Figure 43

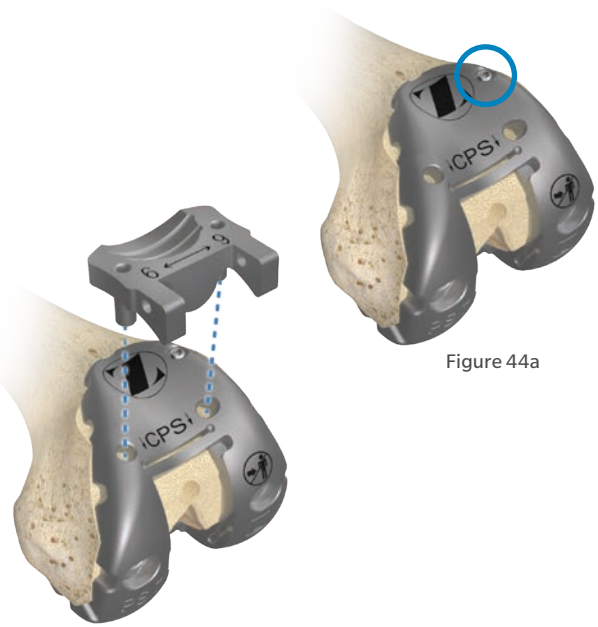


Figure 44a

Figure 44b

Technique Tip: Do not impact the anterior flange of the PS femoral provisional. Do not impact the medial or lateral aspects or the release lever of the femoral inserter/extractor.

Remove any posterior osteophytes or overhanging bone on the femur to facilitate maximum knee flexion. Attach the femoral inserter/extractor to the correct PS femoral provisional by inserting the hook on the femoral inserter/extractor arm into the lateral notch in the PS femoral provisional and close the handle on the femoral inserter/extractor to secure the PS femoral provisional (Figure 42).

Place the correct PS femoral provisional onto the femur in the desired medial/lateral position. Impact the end of the femoral inserter/extractor handle to fully seat the PS femoral provisional onto the femur (Figure 43). To remove the femoral inserter/extractor from the PS femoral provisional, pinch the release lever while pulling out/down (Figure 43).

Alternatively, if the PS femoral provisional is placed on the femur by hand, the femoral inserter/extractor handle must be in the closed and locked position prior to engaging the PS femoral provisional. Then the femoral inserter/extractor can be used to impact the provisional onto the femur. For additional fixation of the fully seated PS femoral provisional, insert the 25 mm x 3.2 mm screw (2.5 mm female hex) with the 2.5 mm male hex driver through the hole in the lateral anterior flange of the PS femoral provisional (Figure 44a).

PS Box Cut Guide for PS Box Preparation Optional Instrument

With the PS femoral provision already in place, by hand, insert and hold the correct-sized PS box cut guide into the anterior holes of the PS femoral provisional (Figure 80). For additional fixation of the fully seated PS box cut guide, insert the 25 mm x 3.2 mm screw (2.5 mm female hex) with the 2.5 mm male hex driver through one of the holes in the PS box cut guide. Separate PS box cut guides exist for the PS femoral provisional for sizes 1–2, 3–5, 6–9, and 10–12.


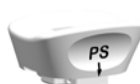




| Persona Femoral Inserter/Extractor | Persona Femoral PS Impactor Pad | Persona PS-CPS Femoral Provisional Size 7 Left | 2.5 mm Male Hex Driver | 25 mm x 2.5mm Female Hex Screw | Persona PS Box Cut Guide 6-9 |
|---|---|---|---|--|---|
| 42-5099-092-00 | 42-5099-093-00 | 42-5047-062-01 | 42-5099-025-00 | 42-5099-025-00 | 42-5099-060-03 |
|  |  |  |  |  |  |



Figure 45a



Figure 45b

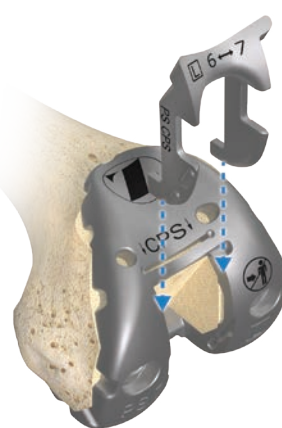


Figure 46

ⓘ **Technique Tip:** Do not impact the PS box cut guide into the provisional.

Make the anterior to posterior PS box cut with a 1.27 mm (0.050 inch) thick, ½ inch wide oscillating or reciprocating saw blade, by resting the saw blade in a parallel manner on the front surface of the PS box cut guide. Avoid undercutting the medial and lateral condyles. This is particularly important for smaller femurs (Figure 45a).

After completing the anterior-to-posterior box cut, make the vertical wall cuts for the PS notch cuts by resting the saw blade in a parallel manner against the interior sidewalls of the PS femoral provisional (Figure 45b).

ⓘ **Technique Tip:** Keep blades against the support features of the cut guide and femoral provisional to ensure adequate bone resection. The cut planes (A/P and vertical) extend below the top of the PS cam.

ⓘ **Technique Tip:** Align the raised bumps on the exterior side walls of the box provisional with the grooves in the interior sidewalls of the femoral provisional.

If a screw was used to provide adjunct fixation, remove the screw and the PS box cut guide. By hand, insert the correct-sized PS box provisional into the PS femoral provisional to assure that adequate bone has been removed for the implant AND for proper patella trialing. Separate left and right PS box provisionals exist for sizes 1–2, 3–5, 6–9, and 10–12 PS femoral provisionals (Figure 46).

Constrained posterior stabilized (CPS) bearings can only be used with non-porous cemented femoral components. If a CPS bearing is selected, the CPS cut slot on the femoral provisional must be used. The CPS cut slot may also be used for PS box resections. Additional information for this product may be found in the Constrained Posterior Stabilized (CPS) Surgical Technique (97-5026-072-00).

ⓘ **Technique Tip:** If the appropriately sized PS box provisionals does not easily seat into the PS femoral provisional, perform clean up cuts to assure adequate bone has been removed. Do NOT impact the PS box provisional. Make sure the PS femoral provisional is fully seated after inserting the correct PS box provisional.

Persona PS-CPS Femoral Provisional Size 7 Left
42-5047-062-01



Persona PS Box Cut Guide 6-9
42-5099-060-03



Persona PS-CPS Box Provisional Size 6-7 Left
42-5047-007-11



2.5 mm Male Hex Driver
42-5099-025-00



25 mm x 2.5mm Female Hex Screw
42-5099-025-00





Figure 47

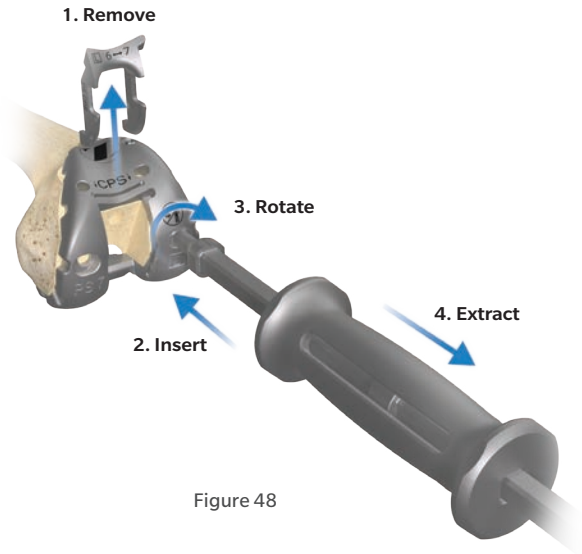


Figure 48

ⓘ Technique Tip: Ensure the shoulder of drill is seated at bottom of the femoral provisional counterbore.

Drill the pegs holes for the size 3 through 12 femoral implants with the NexGen 6.4 mm Patella/Femoral Drill (Figure 47). The size 1 and 2 femoral components do not have pegs thus drilling is not required for those sizes. Remove the screw from the anterior flange in the PS femoral provisional. Remove the PS box provisional. The slaphammer can be used to remove size 3 through 12 PS femoral provisionals (Figure 48). Rotate the slaphammer a ¼ turn outward. For size 1 and 2 PS femoral provisionals the slaphammer can be inserted into the notch on the medial or lateral side of the provisional. Alternatively, the femoral inserter/

extractor can be re-attached to the PS femoral provisional to remove it from the bone. If necessary, insert the slaphammer in the extraction hole of the femoral inserter/extractor to facilitate removal.

ⓘ Technique Tip: Ensure oval hole of the femoral provisional is free of debris prior to inserting slaphammer.

ⓘ Technique Tip: If trialing with TASP leave femoral provisional in place until trialing is complete.

ⓘ Technique Tip: Do not impact the anterior flange of the PS femoral provisional for removal, as this may damage the PS femoral provisional.

Persona PS-CPS Femoral Provisional Size 7 Left
42-5047-062-01



Persona PS-CPS Box Provisional Size 6-7 Left
42-5047-007-11



Persona Slaphammer
42-5099-037-00



NexGen 6.4 mm Patella/ Femoral Drill
00-5120-052-01



2.5 mm Male Hex Driver
42-5099-025-00



25 mm x 2.5mm Female Hex Screw
42-5099-025-00



Tibial Preparation

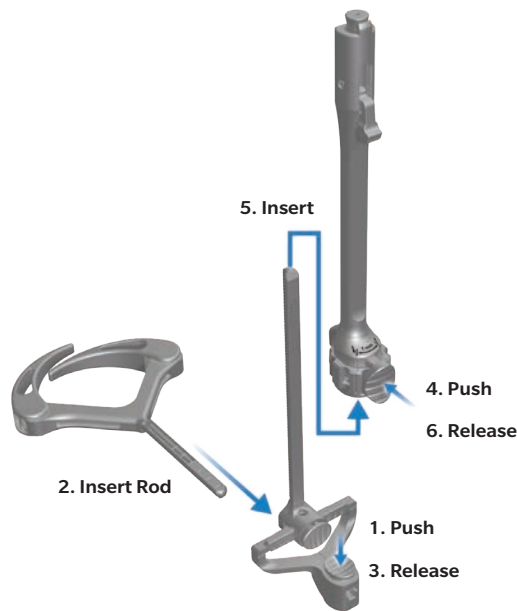


Figure 49

Step 1 Resect Proximal Tibia – Extramedullary Alignment Guide

Assemble Extramedullary (EM) Alignment Guide

Depress and hold the button on the EM distal rod and insert the threaded rod on the EM ankle clamp into the distal rod and release the button. Depress and hold the button on the distal end of the EM proximal tube and insert the EM distal rod into the EM proximal tube and release the button (Figure 49).

Attach the selected tibial cut guide to the EM alignment guide (Figure 50).

- 1. Lift the lever on the EM proximal tube up.
- 2. Translate the cut guide onto the top of the EM proximal tube, under the locking cone.
- 3. Push down the lever on the EM proximal tube to lock the cut guide in place.

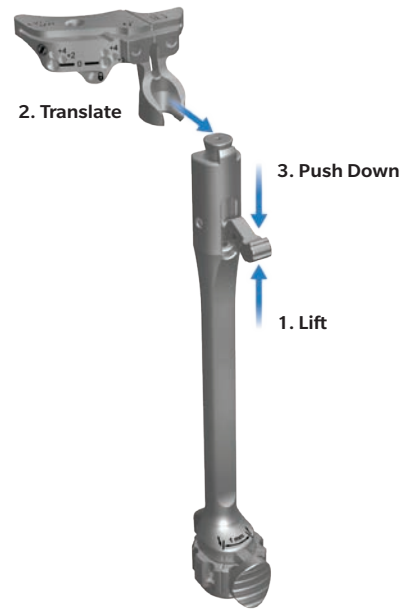


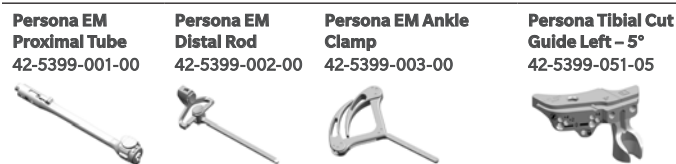
Figure 50

The system includes the following cut guides in left and right configurations and universal (non-sided) configurations.

| Left & Right Configurations | Universal Configurations |
|-----------------------------|--------------------------|
| 3° | 3° |
| 5° | — |
| 7° | 7° |

ⓘ Technique Tip: It is recommended to use the 3° cut guide for a PS and CPS component and the 7° cut guide for a CR component. **CPS can only be used with cemented components.** If the UC bearing is to be used, the recommended tibial cut slope is 5°–7°. If the MC bearing is used, the recommended tibial slope is 5°. However, 7° is allowable particularly when the PCL is retained.

| Constraint | Recommended Slope |
|---------------------|-------------------|
| CR | 7° |
| UC | 5° to 7° |
| MC | 5° to 7° |
| PS | 3° |
| CPS (Cemented Only) | 3° |



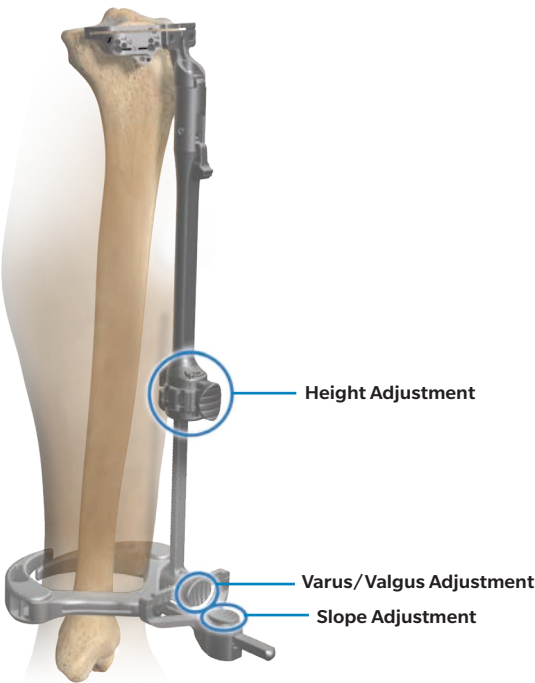


Figure 51

The buttons shown in Figure 51 are used to adjust the following: varus/valgus angle of the cut guide, slope of the cut guide and the height of the cut guide. The height adjustment button can be depressed for macro-adjustment or the dial can be rotated for micro adjustment.

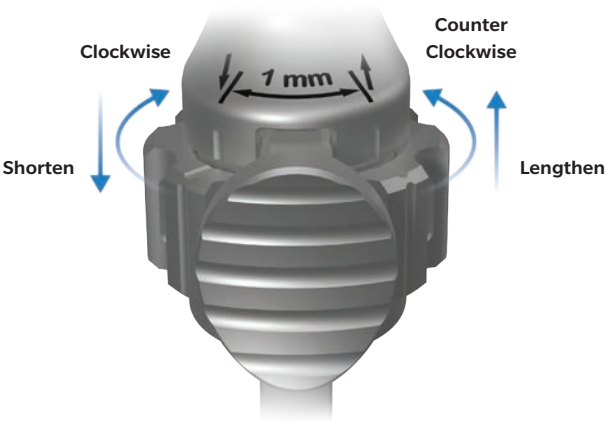


Figure 52

One full rotation of the dial equals 4 mm of height adjustment and ¼ turn equals 1 mm of height adjustment (Figure 52). Rotating the height adjustment dial clockwise shortens the alignment guide and rotating the dial counterclockwise lengthens the alignment guide.

EM Alignment Guide Adjustment

| | |
|------------------------|-----|
| 1 Full Rotation (360°) | 4mm |
| ¼ Rotation (90°) | 1mm |

| | | | |
|---|---|---|---|
| Persona EM Proximal Tube 42-5399-001-00 | Persona EM Distal Rod 42-5399-002-00 | Persona EM Ankle Clamp 42-5399-003-00 | Persona Tibial Cut Guide Left – 5° 42-5399-051-05 |
|  |  |  |  |



Figure 53

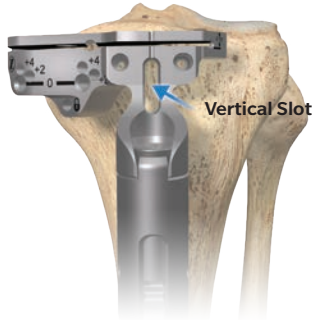


Figure 54



Figure 55

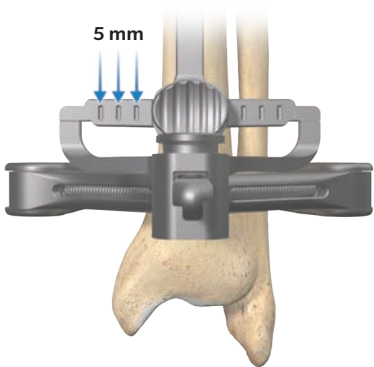


Figure 56

Position Alignment Guide

To improve the exposure of the tibial surface, retract the tibia anteriorly. Carefully position a retractor against the posterior cortex of the tibia subperiosteally to prevent neurovascular injury. Retract the patella laterally. Adjust the EM alignment guide to the approximate length of the tibia. Place the spring arms of the EM ankle clamp around the ankle proximal to the malleoli. Align the vertical slot in the cut guide with the medial third of the tibial tubercle for proper rotation.

Adjust the height of the cut guide to the approximate desired location. Use the engraved line on the top of the cut guide to align the rotational and M/L placement guide (Figure 53). A 3.2 mm pin or screw may be inserted through the 12 mm vertical slot in the cut guide to secure the desired M/L and rotational position of the proximal portion of the guide (Figure 54).

Note: This pin will need to be removed to allow the “+2” or “+4” mm shifts with the cut guide. Care should be taken when pinning into the tibia to avoid perforating the posterior cortex.

Align the EM alignment guide with the mechanical axis of the tibia (Figure 55). The longitudinal axis will usually lie just medial to the mid-point of the tibial tubercle and be centered in line with the intercondylar eminence. The distal end of the EM alignment guide should be positioned 5 to 10 mm medial to the midpoint between the medial and lateral malleoli. The short vertical engraved lines on the varus/valgus adjustment rail are incremented by 5 mm to aid in setting the desired varus/valgus position of the EM alignment guide (Figure 56). Excessive soft tissue or poor exposure or visualization can make it difficult to palpate bony landmarks so care should be taken to ensure accurate cuts.





| | | | | | | |
|---|---|---|---|---|---|---|
| Persona EM Proximal Tube 42-5399-001-00 | Persona EM Distal Rod 42-5399-002-00 | Persona EM Ankle Clamp 42-5399-003-00 | Persona Tibial Cut Guide Left – 5° 42-5399-051-05 | 3.2 mm x 75 mm Trocar Tipped Drill Pin (2.5 mm hex) 00-5901-020-00 | Pin Screw Insertor 00-5901-021-00 | 3.2 mm Drill 00-5120-085-00 |
|  |  |  |  |  |  |  |



Figure 57

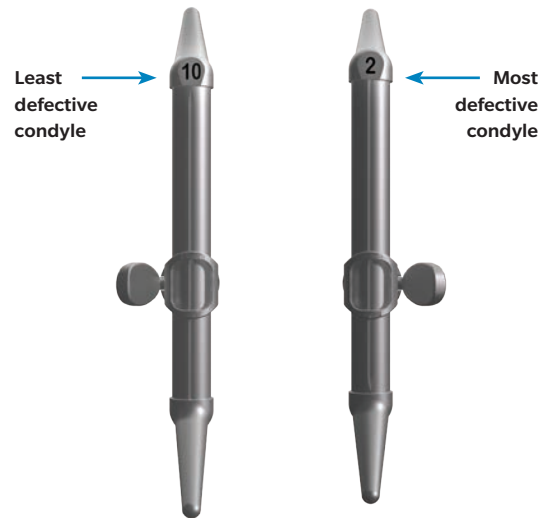


Figure 58

Position Alignment Guide

Adjust the EM alignment guide in the sagittal plane to be parallel to the anterior tibial crest. A 3.2 mm drill or the 3.2 mm pin can be placed through the hole in the slot of the cut guide to help assess the expected slope of the tibial resection, and if desired, match the patient's specific anatomic slope (Figure 57). As necessary, adjust the tibial slope of the EM alignment guide. If there is bulky bandage around the ankle or if there is excessive adipose tissue, the guide can be adjusted to create the desired slope. This will help ensure that the tibia will be cut with the proper slope. Care should be taken to avoid excessive posterior slope and to verify coronal alignment to the mechanical axis.

WARNING: If excessive wear exists on the posterior plateau do not match the slope to the worn area. Evaluate on the opposite side to avoid a resection with excessive posterior slope.

Set Resection Level

Each tip of the stylus indicates a different resection level. The 2 mm tip is used to establish the resection level (Figure 58) from the most defective tibial condyle for a minimal cut. The 10 mm tip is used to establish the resection level from the least defective tibial condyle.

Persona Tibial Cut
Guide Left – 5°
42-5399-051-05



Persona EM
Proximal Tube
42-5399-001-00



3.2 mm Drill
00-5120-085-00



Persona Tibial Stylus
~2/10 mm
42-5399-005-00



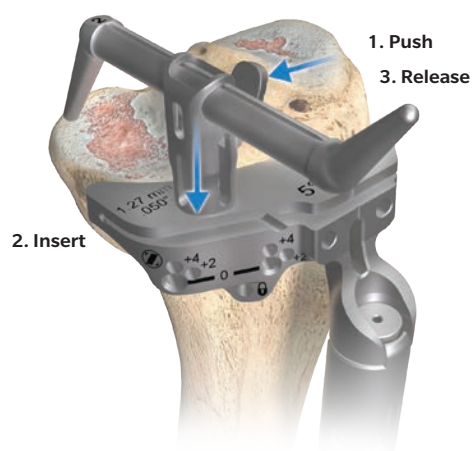


Figure 59



Figure 60



Figure 61

To assemble, push and hold the lever on the stylus and insert the stylus into the top of the cut guide and release the lever (Figure 59). The stylus rotates and telescopes to facilitate desired positioning of the stylus tip.

☹ **Technique Tip:** Boom tip must be in the vertical position to accurately assess resection level. Correct position is verified with an audible click as the boom twists.

WARNING: An excessive bone resection will result if the boom is not in the vertical position.

☹ **Technique Tip:** If using the top surface of the cut guide to make the resection, follow this technique for setting the resection level with the stylus. Then follow the uncaptured cut optional technique at the end of this section. The stylus tips correlate to the position of the cut slot.

The 2 mm tip should rest on the most defective tibial condyle (Figure 60). This positions the slot of the cut guide to remove 2 mm of bone below the tip of the stylus.

Alternatively, rest the 10 mm tip of the stylus on the cartilage of the least defective condyle (Figure 61). This will allow the removal of the same amount of bone that the thinnest tibial component will replace. These two points of resection will usually not coincide. The surgeon must determine the appropriate level of resection based on patient's needs, such as bone quality. Rotate the micro-adjustment dial of the EM proximal tube to position the stylus and the cut guide to the desired level.

☹ **Technique Tip:** When adjusting the height of the EM alignment guide steady the distal portion of the guide with one hand and use the other hand to adjust the height of the proximal portion of the guide.

Persona Tibial Cut Guide Left – 5°
42-5399-051-05



Persona EM Proximal Tube
42-5399-001-00



Persona Tibial Stylus –2/10 mm
42-5399-005-00





Figure 62

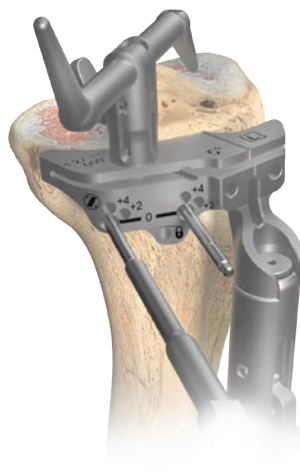


Figure 63

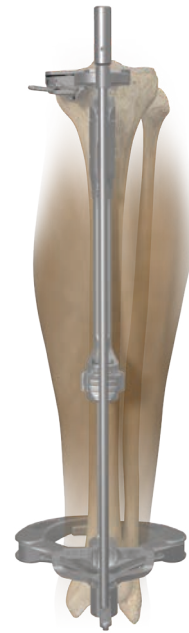


Figure 64











Position Alignment Guide

A resection guide can be placed through the cut slot on the cut guide, to verify the desired level and slope of the resection (Figure 62). Insert a 3.2 mm trocar tipped pin through one of the “0” holes in the cut guide with the pin/screw inserter. Ensure the cut guide is flush to the bone and not impeded by soft tissues before making the cut.

Insert a second trocar tipped pin through the other “0” hole in the cut guide with the pin/screw inserter (Figure 63). Remove the stylus by pushing the lever on the side of the stylus and remove.

To confirm alignment, insert the drop rod adapter into the cut guide and insert the alignment rod into the adapter (Figure 64).

ⓘ Technique Tip: Care should be taken when pinning into the tibia to avoid perforating the posterior cortex.

| | | | | |
|--|---|--|--|---|
| Persona EM Proximal Tube 42-5399-001-00  | Persona EM Distal Rod 42-5399-002-00  | Persona EM Ankle Clamp 42-5399-003-00  | Persona Tibial Cut Guide Left – 5° 42-5399-051-05  | 3.2 mm x 75 mm Trocar Tipped Drill Pin (2.5 mm hex) 00-5901-020-00  |
| Pin Screw Inserter 00-5901-021-00  | Resection Guide 00-5977-084-00  | Alignment Rod with Coupler 00-5785-080-00  | Persona Tibial Stylus -2/10 mm 42-5399-005-00  | Persona Drop Rod Adapter 42-5399-006-00  |

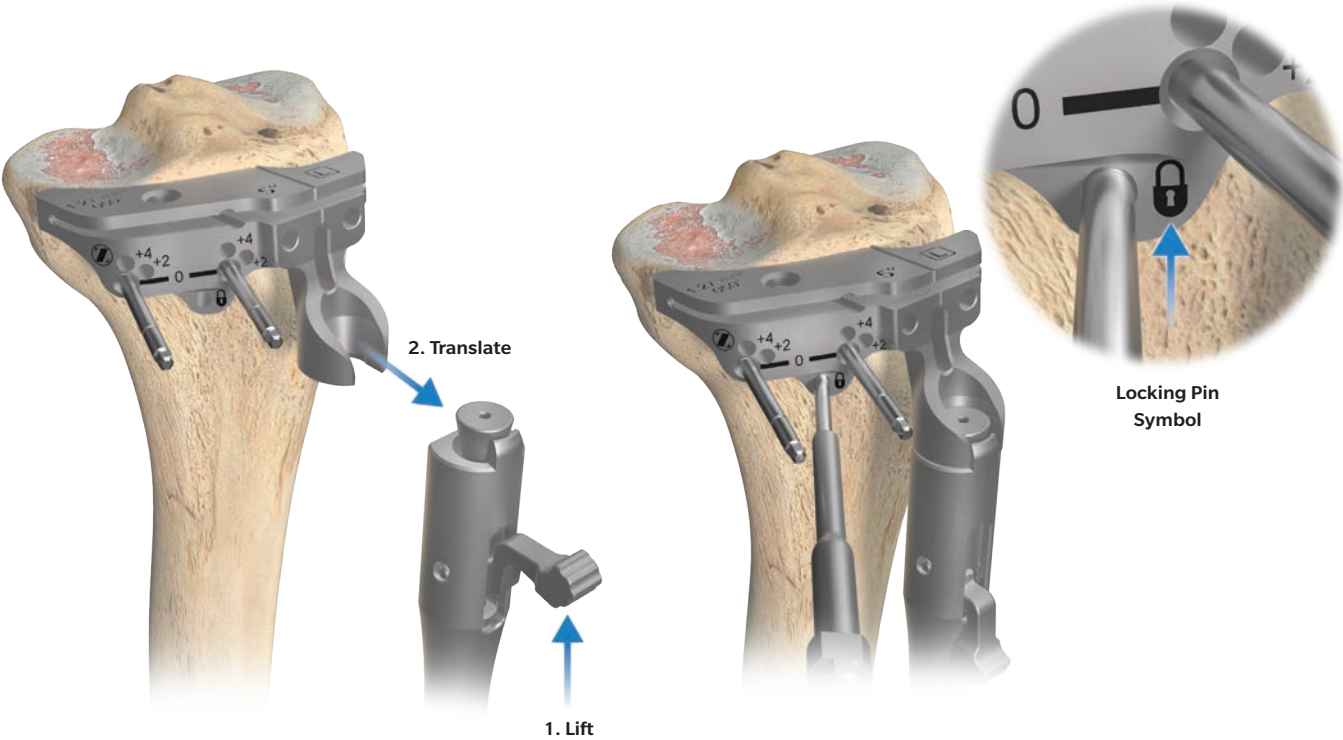


Figure 65

Figure 66

Resect Proximal Tibia

The entire EM alignment guide can be left in place for additional stability during resection. Optionally, the EM alignment guide can be removed by lifting the lever on the EM proximal tube up to the open position, translating the EM alignment guide anteriorly while leaving the cut guide in place (Figure 65). If the EM alignment guide has been removed, additional 2 mm adjustments may be made by shifting the cut guide to the sets of holes marked “+2”, and “+4”. The markings on the cut guide indicate, in millimeters, the amount of additional bone resection relative to the standard tibial resection set by the cut guide and stylus. If a pin or screw was inserted into the 12 mm vertical slot, it will need to be removed to make the 2 mm adjustments.

Once the resection level has been determined, an optional 3.2 mm trocar tipped pin in the oblique hole indicated by a lock pin symbol can be used to further secure the cut guide (Figures 66). If a pin or screw was inserted into the 12 mm vertical slot, then a pin through the oblique hole may not be needed for secure fixation.

| | | | | |
|---|---|---|---|--|
| Persona EM Proximal Tube 42-5399-001-00 | 3.2 mm x 75 mm Trocar Tipped Drill Pin (2.5 mm hex) 00-5901-020-00 | Pin Screw Inserter 00-5901-021-00 | Persona Tibial Cut Guide Left – 5° 42-5399-051-05 | Multi Pin Puller 00-5901-022-00 |
|  |  |  |  |  |



Figure 67

Use a 1.27 mm (0.050 inch) oscillating saw blade through the slot on the cut guide to resect the proximal surface of the tibia (Figure 67).

ⓘ **Note:** The flatness of the proximal tibial resection is critical to ensuring adequate contact between the porous tibial implant and the bone. If using a porous tibial implant, evaluate the flatness of the proximal tibial resection prior to broaching the keel and drilling for the pegs. Modify the cut as necessary so that it is completely flat.

ⓘ **Technique Tip:** The patellar tendon may be located behind the lateral side of the cut guide due to the patellar tendon relief cutout on the cut guide. Be careful to avoid cutting the patellar tendon when resecting the tibia.

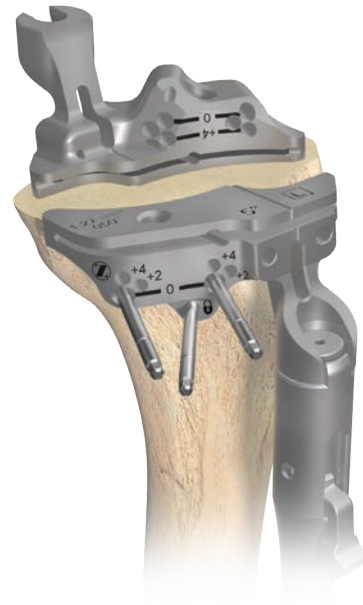


Figure 68

Prior to removing the cut guide, a contralateral or universal cut guide (of any angle) can be inverted and placed on the resected tibia to assure that a planar cut has been achieved (Figure 68). If necessary, perform a clean-up cut.

Remove oblique pins and the tibial cut guide.

ⓘ **Technique Tip:** If unable to complete the resection on the lateral side of the tibia, remove the cut guide, extend the knee and retract the soft tissue on the lateral side. If necessary, use a saw or osteotome to complete the resection.

| Persona EM Proximal Tube 42-5399-001-00 | 3.2 mm x 75 mm Trocar Tipped Drill Pin (2.5 mm hex) 00-5901-020-00 | Persona Tibial Cut Guide Left – 5° 42-5399-051-05 | Pin Screw Inserter 00-5901-021-00 | Multi Pin Puller 00-5901-022-00 |
|---|---|---|---|--|
|  |  |  |  |  |



Figure 69

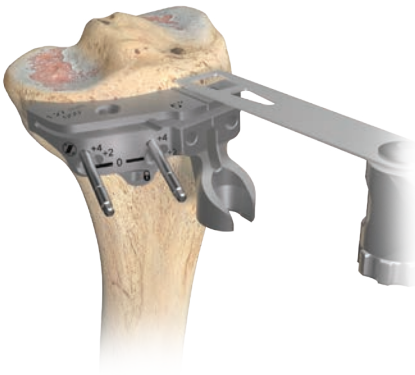


Figure 70

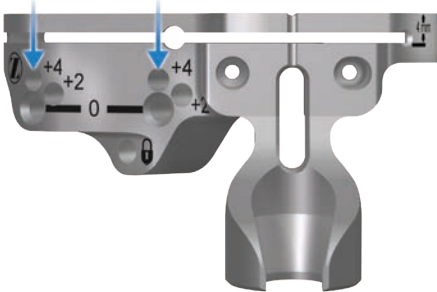








Figure 71

If the cut guide has been removed, the drop rod adapter and alignment rod can be inserted into the holes on the inverted contralateral or universal cut guide (of any angle) to verify the desired tibial resection angle (Figure 69).

Remove all pins.

Uncaptured Cut Optional Technique

If desired, the resection can be made from the top surface of the cut guide. The top surface of the cut guide is 4 mm above the cut slot (Figure 70); therefore, the position of the cut guide must be adjusted by moving the cut guide from the headless pins and reinserting the cut guide through the holes marked “+4” (Figure 71).

| | | | | | |
|---|---|---|---|--|---|
| Persona Tibial Cut Guide Left – 5° 42-5399-051-05 | 3.2 mm x 75 mm Trocar Tipped Drill Pin (2.5 mm hex) 00-5901-020-00 | Persona Drop Rod Adapter 42-5399-006-00 | Alignment Rod with Coupler 00-5785-080-00 | Pin Screw Inserter 00-5901-021-00 | Multi Pin Puller 00-5901-022-00 |
|  |  |  |  |  |  |

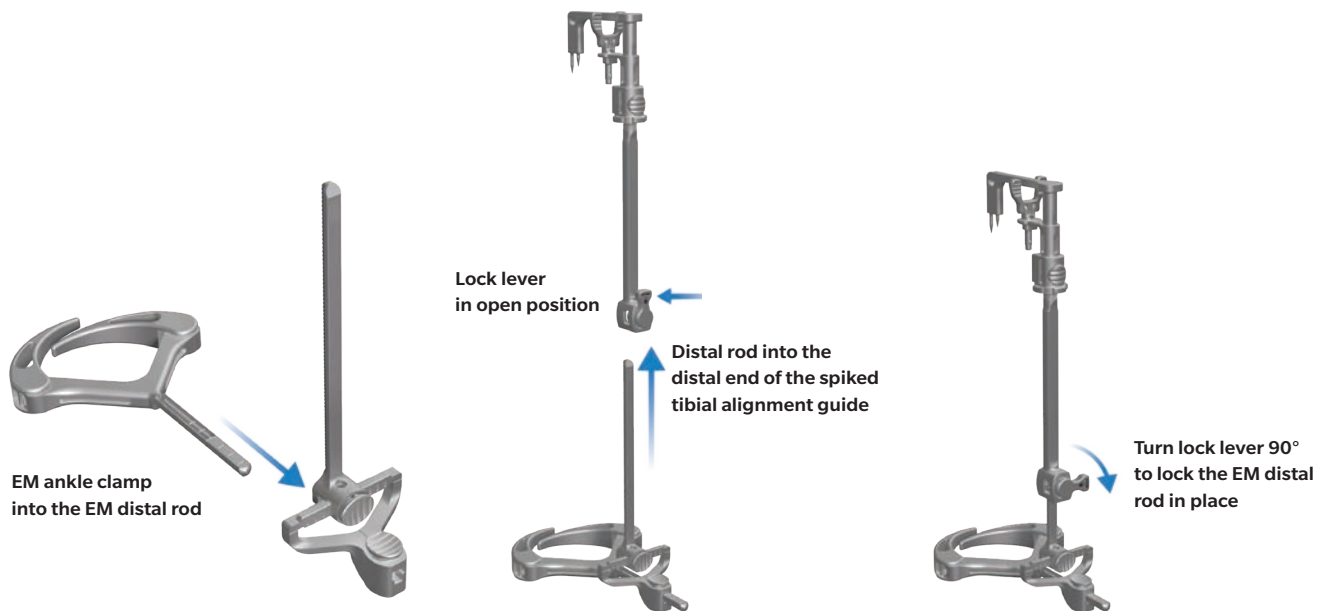





Figure 72

Step 1 Resect Proximal Tibia - Spiked Tibial Alignment Guide

Depress and hold the button on the EM distal rod and insert the threaded rod on the EM ankle clamp into the distal rod and release the button. Ensure the lock lever is in the open position on the distal end of the spiked tibial alignment guide and insert the EM distal rod into the spiked tibial alignment guide and turn the lock lever ¼ turn, 90°, to the locked position (Figure 72).

| Persona Spiked Tibial Alignment Guide 42-5399-001-20 | Persona EM Distal Rod 42-5399-002-00 | Persona EM Ankle Clamp 42-5399-003-00 |
|---|---|---|
|  |  |  |

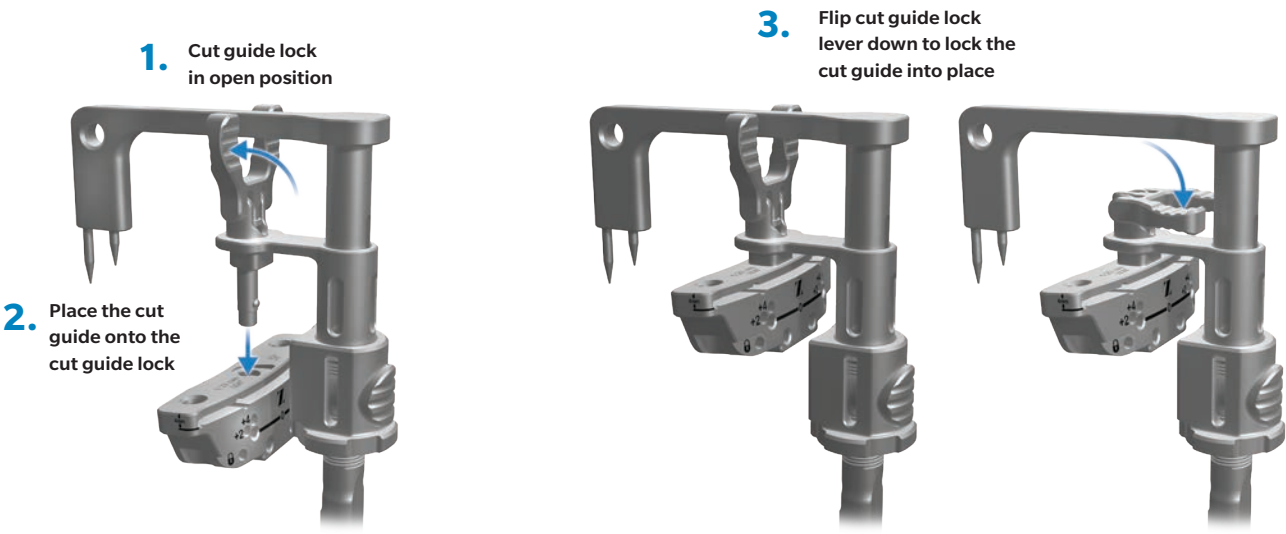


Figure 73

Attach the selected spiked tibial cut guide to the spiked tibial alignment guide (Figure 73).

- 1. Ensure the cut guide lock is in the open position.
- 2. Place the cut guide onto the cut guide lock.
- 3. Flip the cut guide lock down into the locked position.

The system includes three different spiked tibial cut guides that can attach to the spiked tibial alignment guide: a 3° cut guide, a 5° cut guide and a 7° cut guide.

| Cut Guide Configurations |
|--------------------------|
| 3° |
| 5° |
| 7° |

Note: The 3°, 5° and 7° spiked tibial cut guides are not interchangeable once pinned. The spike arm needs to be re-attached to adjust slope.

Technique Tip: It is recommended to use the 3° cut guide for a PS and CPS component and the 7° cut guide for a CR component. **CPS can only be used with cemented components.** If the UC bearing is to be used, the recommended tibial cut slope is 5°–7°. If the MC bearing is used, the recommended tibial slope is 5°. However, 7° is allowable particularly when the PCL is retained.

| Constraint | Recommended Slope |
|---------------------|-------------------|
| CR | 7° |
| UC | 5° to 7° |
| MC | 5° to 7° |
| PS | 3° |
| CPS (Cemented Only) | 3° |

Persona Spiked Tibial Alignment Guide
42-5399-001-20



Persona Spiked Tibial Cut Guide 5°
42-5399-051-25



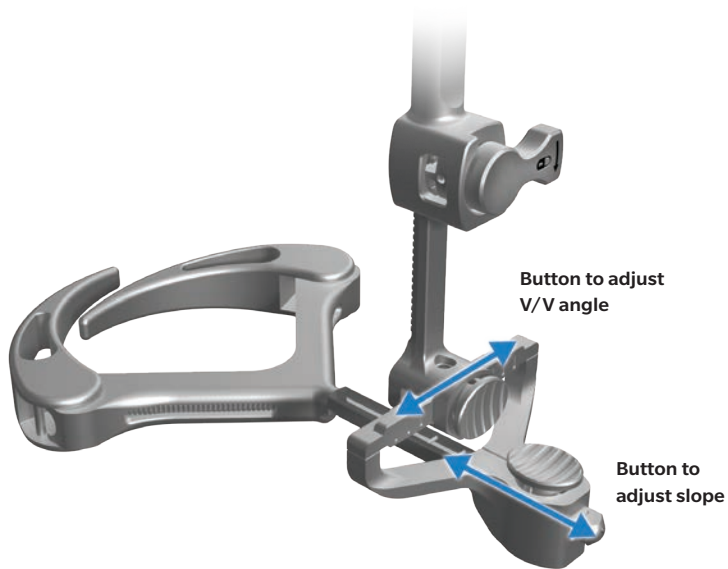


Figure 74

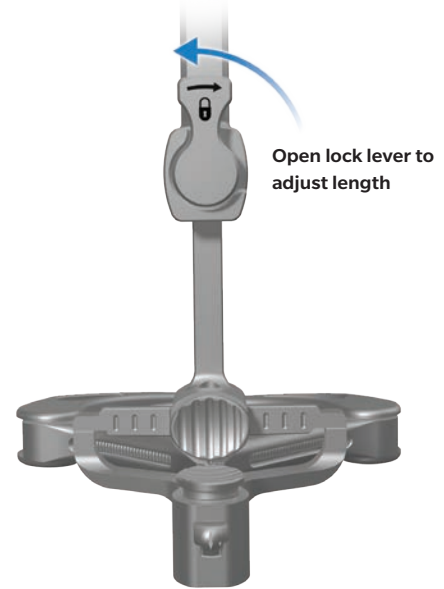





Figure 75

The buttons shown in Figure 74 are used to adjust the following: varus/valgus angle of the cut guide and slope of the cut guide. The Lock Lever in Figure 75 can be used to adjust the length of the spiked tibial alignment guide.

Position Spiked Tibial Alignment Guide

To improve the exposure of the tibial surface, retract the tibia anteriorly. Carefully position the retractor against the posterior cortex of the tibia subperiosteally to prevent neurovascular injury. Retract the patella laterally. Adjust the spiked tibial alignment guide to the approximate length of the tibia using the Lock Lever (Figure 75).

| Persona Spiked Tibial Alignment Guide | Persona EM Distal Rod | Persona EM Ankle Clamp |
|---|---|---|
| 42-5399-001-20 | 42-5399-002-00 | 42-5399-003-00 |
|  |  |  |

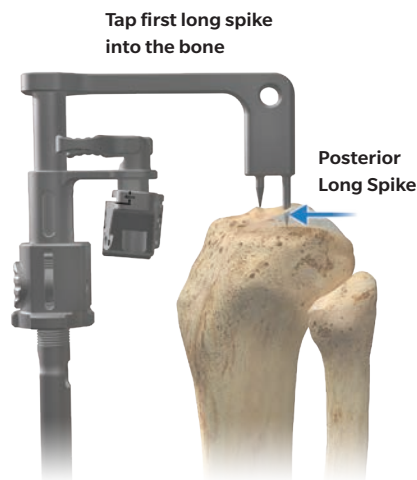


Figure 76

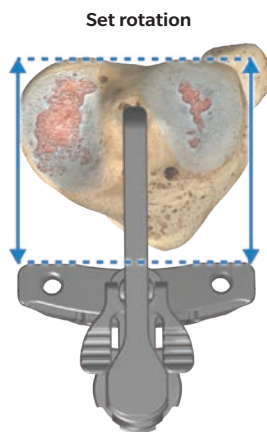


Figure 77

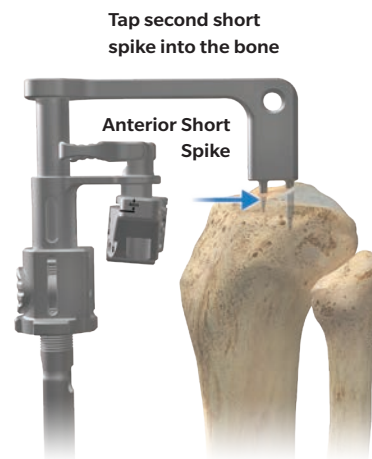


Figure 78

Place the spring arms of the EM ankle clamp around the ankle proximal to the malleoli. Stabilize the spiked tibial alignment guide, by tapping in only the longest spike into the central tibial plateau just anterior to the tibial spine in the midline (Figure 76). Set the rotation of the spiked tibial alignment guide by aligning the guide to the medial third of the tibial tubercle. As a secondary check, the cut guide should be parallel to the posterior edges of the proximal tibia (Figure 77). Once aligned, lock the guide into position by tapping the shorter spike into the proximal tibia (Figure 78).

Persona Spiked Tibial Alignment Guide
42-5399-001-20



Persona Spiked Tibial Cut Guide 5°
42-5399-051-25



Persona EM Ankle Clamp
42-5399-003-00



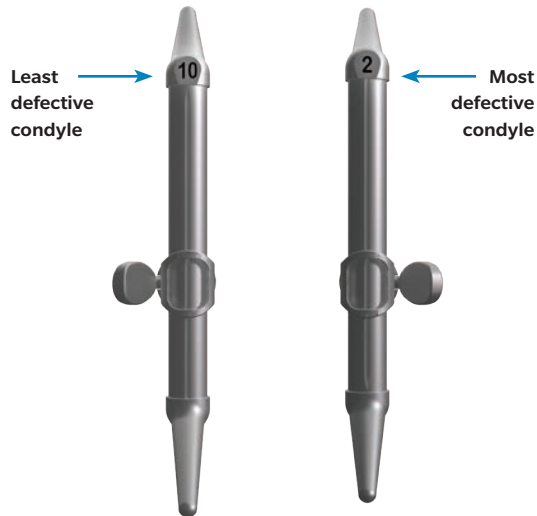


Figure 79

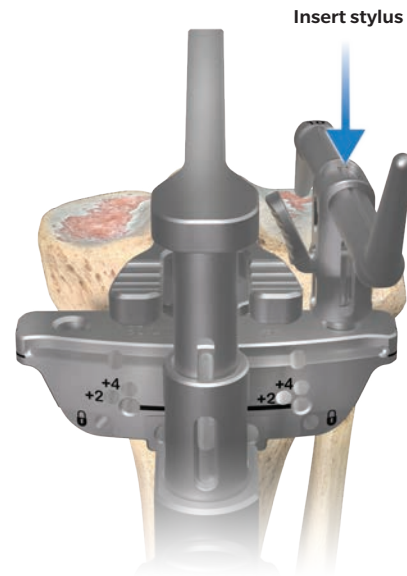


Figure 80

Set Resection Level

Each tip of the stylus indicates a different resection level (Figure 79). The 2 mm tip is used to establish the resection level from the most defective tibial condyle for a minimal cut. The 10 mm tip is used to establish the resection level from the least defective tibial condyle.

To assemble, push and hold the lever on the stylus and insert the stylus into the top of the cut guide and release the lever (Figure 80). The stylus rotates and telescopes to facilitate desired positioning of the stylus tip.

☰ **Technique Tip:** Boom tip must be in the vertical position to accurately assess resection level. Correct position is verified with an audible click as the boom twists.

WARNING: An excessive bone resection will result if the boom is not in the vertical position.

☰ **Technique Tip:** If using the top surface of the cut guide to make the resection, follow this technique for setting the resection level with the stylus. Then follow the uncaptured cut optional technique at the end of this section. The stylus tips correlate to the position of the cut slot.

**Persona Spiked Tibial
Alignment Guide**
42-5399-001-20



**Persona Spiked Tibial
Cut Guide 5°**
42-5399-051-25



**Persona Tibial Stylus
-2/10 mm**
42-5399-005-00



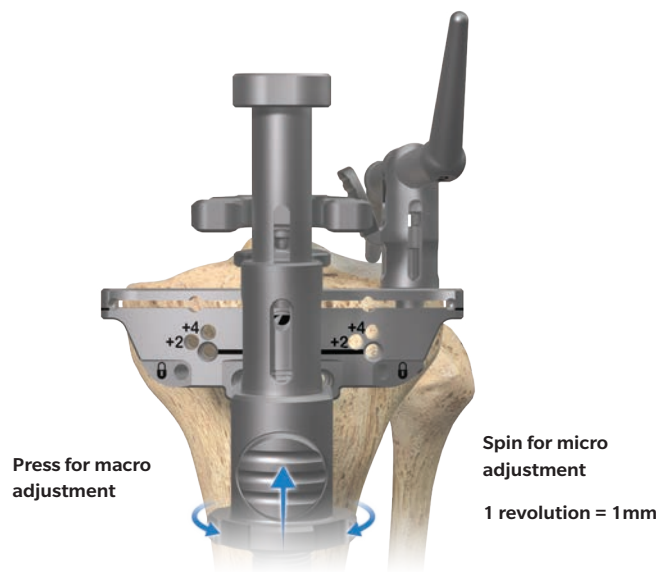


Figure 81

The 2 mm tip should rest on the most defective tibial condyle. This positions the slot of the cut guide to remove 2 mm of bone below the tip of the stylus.

Alternatively, rest the 10 mm tip of the stylus on the cartilage of the least defective condyle. This will allow the removal of the same amount of bone that the thinnest tibial component will replace. These two points of resection will usually not coincide. The surgeon must determine the appropriate level of resection based on patient’s needs, such as bone quality. The resection depth adjustment button can be depressed for macro-adjustment or the dial can be rotated for micro adjustment.

One full rotation of the dial equals 1 mm of height adjustment (Figure 81). Rotating the height adjustment dial clockwise decreases the amount of resection and rotating the dial counterclockwise increases the amount of resection.

Spiked Tibial Alignment Guide Adjustment

| | |
|------------------------|-----|
| 1 Full Rotation (360°) | 1mm |
|------------------------|-----|

| | | |
|---|---|---|
| Persona Spiked Tibial Alignment Guide 42-5399-001-20 | Persona Spiked Tibial Cut Guide 5° 42-5399-051-25 | Persona Tibial Stylus -2/10 mm 42-5399-005-00 |
|  |  |  |

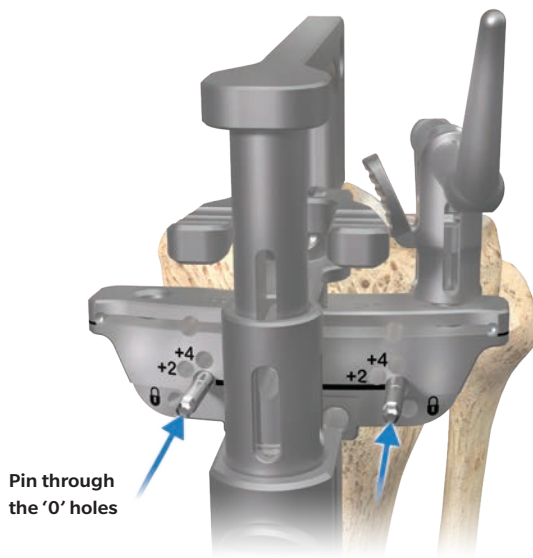


Figure 82

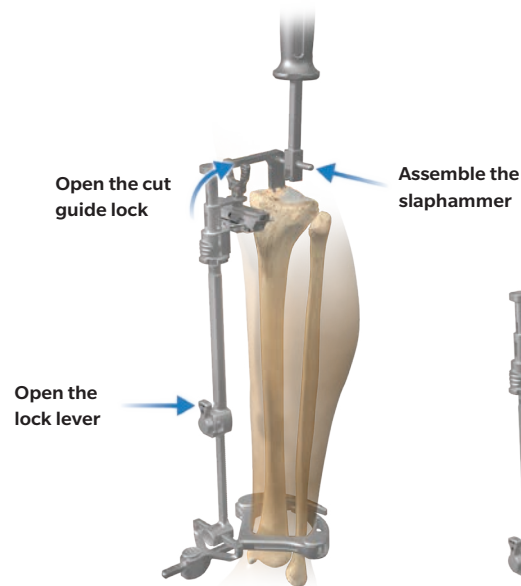


Figure 83



Figure 84

A resection guide can be placed through the cut slot on the cut guide, to verify the desired level and slope of the resection. Insert a 3.2 mm trocar tipped pin through one of the “0” holes in the cut guide with the pin/screw inserter (Figure 82). Insert a second trocar tipped pin through the other “0” hole in the cut guide with the pin/screw inserter (Figure 82). Remove the stylus by pushing the lever on the side of the stylus and remove.

Remove the spiked tibial alignment guide by unlocking the cut guide and ensure the connection to the distal rod is in the open unlocked position (Figure 83). Use the slap hammer to remove the spikes from the bone and translate the spiked tibial alignment guide up and anteriorly while leaving the cut guide in place (Figure 84).

Persona Spiked Tibial Alignment Guide
42-5399-001-20



Persona EM Distal Rod
42-5399-002-00



Persona EM Ankle Clamp
42-5399-003-00



Persona Spiked Tibial Cut Guide 5°
42-5399-051-25



3.2 mm x 75 mm Trocar Tipped Drill Pin (2.5 mm hex)
00-5901-020-00



Persona Tibial Stylus -2/10 mm
42-5399-005-00



Persona Slaphammer
42-5099-037-00



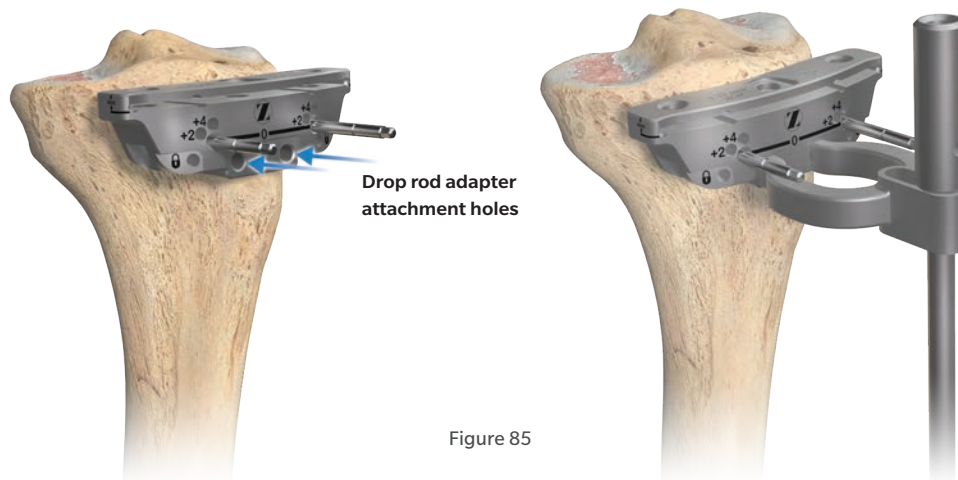


Figure 85

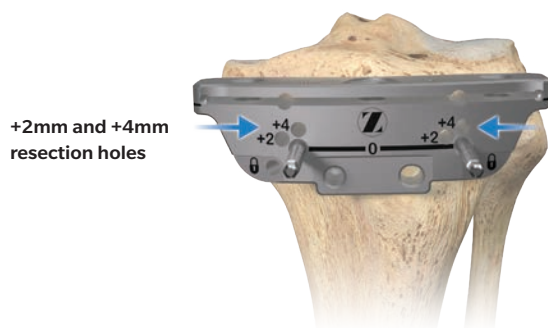


Figure 86

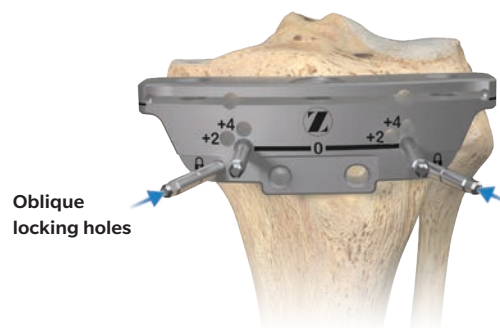


Figure 87

After the spiked tibial alignment guide is removed, confirm alignment by inserting the drop rod adapter into the cut guide and insert the alignment rod into the adapter (Figure 85). If a varus or valgus adjustment is required continue to the 2° Varus/Valgus Spiked Tibial Cut Guide Optional Technique Section.

Additional 2 mm adjustments may be made by shifting the cut guide to the sets of holes marked “+2”, and “+4” (Figure 86). The markings on the cut guide indicate, in millimeters, the amount of additional bone resection relative to the standard tibial resection set by the cut guide and stylus.

Once the resection level has been determined, optional 3.2 mm trocar tipped pins in one or both of the oblique holes indicated by a lock pin symbol can be used to further secure the cut guide (Figures 87).

Use a 1.27 mm (0.050 inch) oscillating saw blade to resect the proximal surface of the tibia. Ensure the cut guide is flush to the bone and not impeded by soft tissues before making the cut.

Prior to removing the cut guide, a cut guide (of any angle) can be inverted and placed on the resected tibia to assure that a planar cut has been achieved. If necessary, perform a clean-up cut.

Note: The flatness of the proximal tibial resection is critical to ensuring adequate contact between the porous tibial implant and the bone. If using a porous tibial implant, evaluate the flatness of the proximal tibial resection prior to broaching the keel and drilling for the pegs. Modify the cut as necessary so that it is completely flat.

Remove pins and the cut guide.

Persona Spiked Tibial Cut Guide 5°
42-5399-051-25



3.2 mm x 75 mm Trocar Tipped Drill Pin (2.5 mm hex)
00-5901-020-00



Persona Drop Rod Adapter
42-5399-006-00



Alignment Rod with Coupler
00-5785-080-00



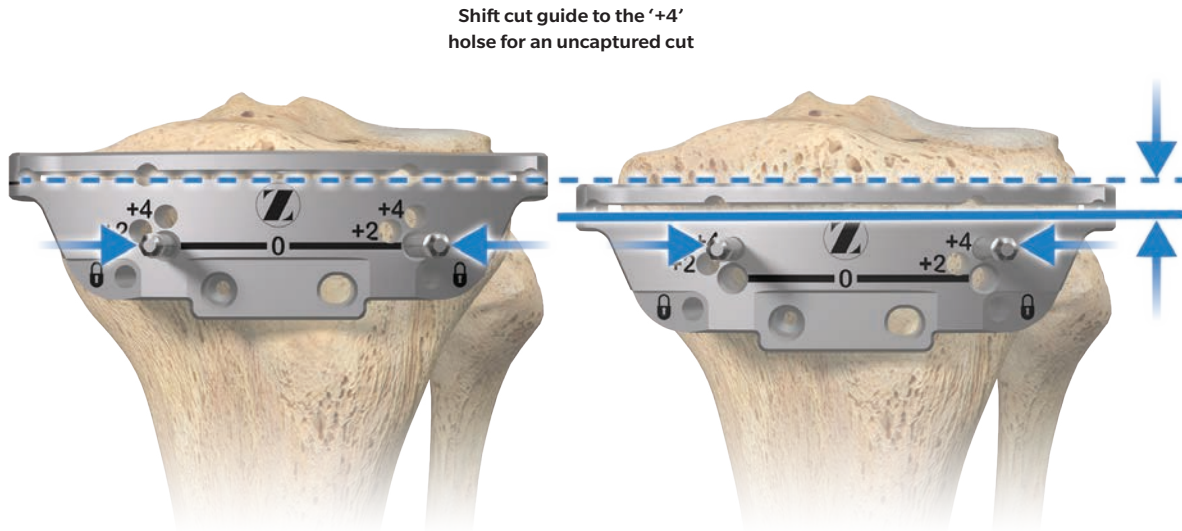


Figure 88

Uncaptured Cut Optional Technique

If desired, the resection can be made from the top surface of the cut guide for an uncaptured cut. The top surface of the cut guide is 4 mm above the cut slot (Figure 88); therefore, the position of the cut guide must be adjusted by moving the cut guide from the headless pins and reinserting the cut guide through the holes marked “+4” (Figure 88).

**Persona Spiked
Tibial Cut Guide 5°**
42-5399-051-25

**3.2 mm x 75 mm Trocar Tipped
Drill Pin (2.5 mm hex)**
00-5901-020-00



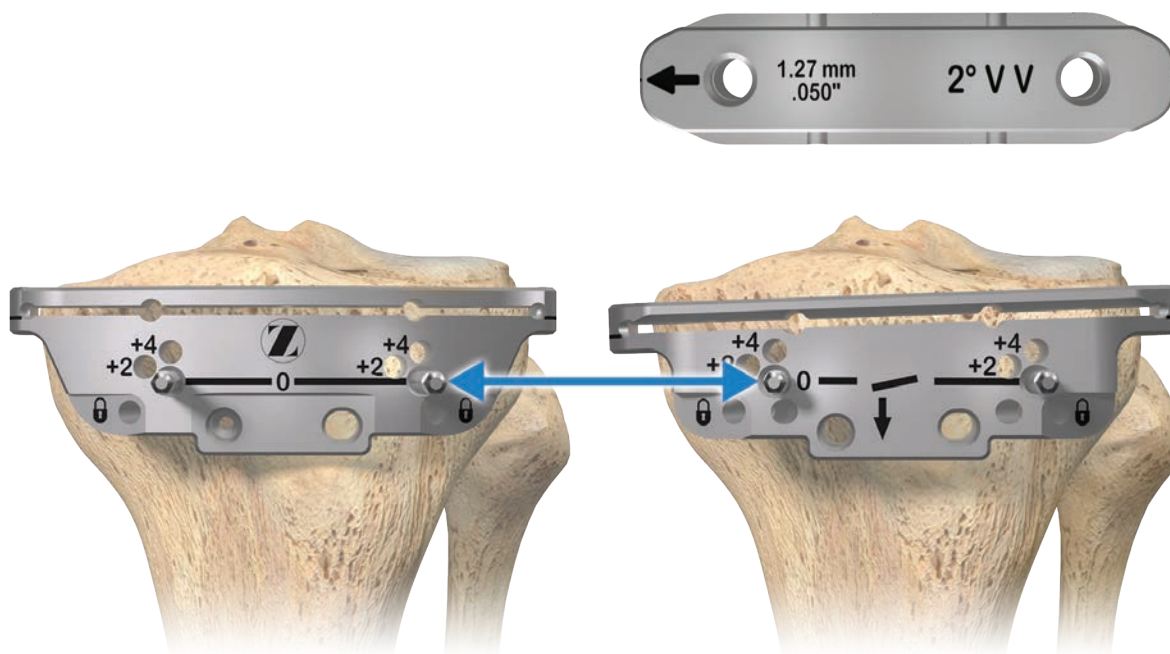


Figure 89

2° Varus/Valgus Spiked Tibial Cut Guide Optional Technique

Remove the spiked tibial cut guide and place the 2° varus/valgus spiked tibial cut guide onto the “0” holes. Place the arrow toward the proximal tibial requiring additional resection (Figure 89). Verify the varus/valgus angle of the desired tibial cut by inserting the drop rod adapter into the 2° varus/valgus spiked tibial cut guide and insert the alignment rod into the adapter. If the tip of the rod falls in the middle of the ankle, then a perpendicular tibial cut will be achieved.

Additional 2 mm adjustments may be made by shifting the cut guide to the sets of holes marked “+2”, and “+4”. The markings on the cut guide indicate, in millimeters, the amount of additional bone resection relative to the standard tibial resection set by the cut guide and stylus. Once the resection level has been determined, optional 3.2 mm trocar tipped pins in one or both of the oblique holes indicated by a lock pin symbol can be used to further secure the cut guide.

ⓘ **Note:** The posterior tibial slope when using the 2° varus/valgus spiked tibial cut guide will match the posterior tibial slope of the spiked tibial cut guide that was originally used to set resection level.

ⓘ **Note:** The 2° varus/valgus spiked tibial cut guide is only compatible with the pins from the 3°, 5° and 7° spiked tibial cut guides.

Persona Spiked Tibial Cut Guide 5°
42-5399-051-25



Persona 2° V/V Spiked Tibial Cut Guide
42-5399-051-22



3.2 mm x 75 mm Trocar Tipped Drill Pin (2.5 mm hex)
00-5901-020-00



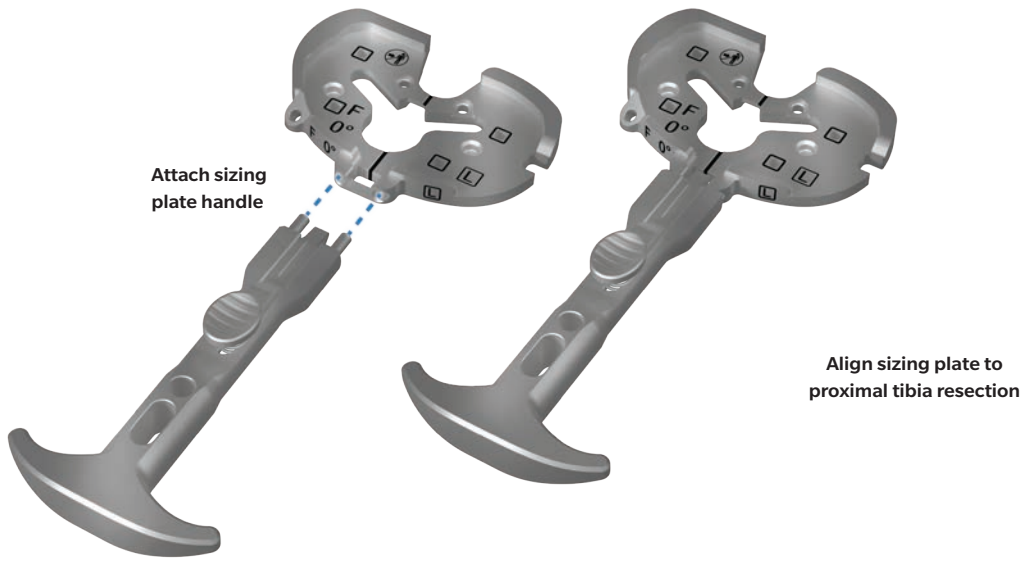


Figure 90



Figure 91

Step 2 Tibial Sizing

Now that the tibia resection has been completed using the recommended slope based on the bearing constraint selected, use only the Persona 0° keel tibia sizing and broaching instrumentation for the preparation of OsseoTi Keel Tibia and Cemented Keel Tibia. The 0° is in reference to the angle of the keel to the baseplate on the OsseoTi Keel Tibia and Cemented Keel Tibia.

Technique Tip: The sizing plates for 0° keel tibial preparation are labeled with the 0° marking.

Once tibial osteophytes have been thoroughly removed, select the appropriate right or left sizing plate that provides the desired tibial coverage, without overhang at any location. Appropriate tibial sizing is important as an oversized tibia component can result in overhang, soft tissue impingement and pain.

Attach the tibial sizing plate handle to the 0° keel tibial sizing plate (Figure 90). The recommended tibial rotational alignment is within 5° of the axis created by the medial 1/3 of the tibial tubercle and the PCL attachment point. The engraved lines on the sizing plate can be used to aid in establishing the desired tibial rotation. Rotate the sizing plate to attain the desired tibial rotational alignment (Figure 91). The notch in the lateral periphery of the sizing plate is used to establish proper position with respect to the lateral border of the tibia without medialization of the sizing plate.

**Persona Tibial Sizing
Plate Handle**
42-5399-017-00

**Persona 0° Keel Tibia Sizing
Plate Size F Left**
42-5399-075-21



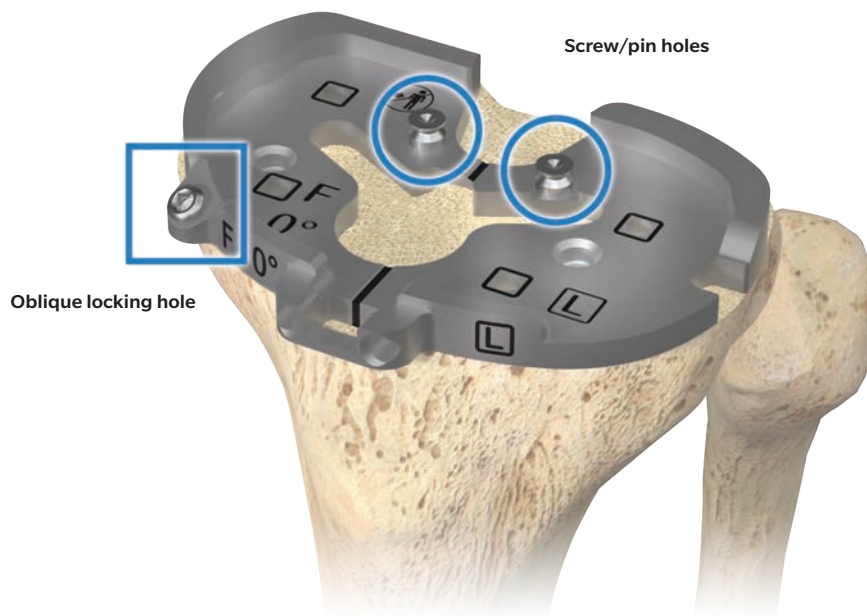


Figure 92

When the desired position has been attained, secure the sizing plate by placing 25 mm x 3.2 mm (2.5 mm female hex) screws or 25 mm x 3.2 mm short head holding pins in the medial and lateral holes near the PCL cutout of the sizing plate (Figure 92). Both female hex screws or male-headed screws/pins can be used in the anterior locking hole for additional stability. If male-headed screws are used, they must be removed prior to using the Tibial Articular Surface Provisionals (TASPs) (Figure 92). Ensure that the sizing plate remains in the proper position when securing it to the bone. Use the alignment rod in the hole or slot in the tibial sizing plate handle to verify proper tibial plate varus/valgus alignment. Once desired alignment has been verified with the alignment rod, remove the tibial sizing plate handle from the sizing plate.

ⓘ **Technique Tip:** Do not impact, lever, or pry the tibial sizing plate handle; this instrument is designed for alignment purposes only.

ⓘ **Note:** The flatness of the proximal tibial resection is critical to ensuring adequate contact between the porous tibial implant and the bone. If using a porous (uncemented) tibial implant, evaluate the flatness of the proximal tibial resection with the tibial sizing plate prior to broaching the keel and drilling for the pegs. Modify the cut as necessary so that it is completely flat.

Persona Tibial Sizing Plate Handle
42-5399-017-00



Persona 0° Keel Tibia Sizing Plate Size F Left
42-5399-075-21



25 mm Shorthead Holding Pin
00-5977-056-03



25 mm x 2.5 mm Female Hex Screw
42-5099-025-25



Alignment Rod with Coupler
00-5785-080-00



2.5 mm Male Hex Driver
42-5099-025-00



Assemble keel drill
 guide posterior tab into
 undercut on sizing plate



Figure 93

Lower keel drill guide
 until flush on sizing plate



Figure 94

Keel drill into keel
 drill guide until
 drill stop contacts

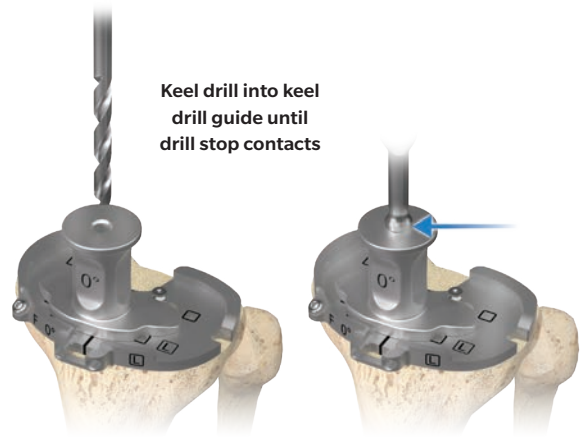


Figure 95

Step 3 Tibial Drilling

The keel of the tibial implant has a unique location for every size; therefore, it is critical to select the proper size and position at this step before broaching. Once these subsequent steps have been performed, the size and position should not be changed. If desired, femoral finishing can be performed in conjunction with provisional trialing at this stage to assure that the desired range of motion and soft tissue balance can be attained with the sizing plate in place prior to drilling and broaching the tibia.

ⓘ Technique Tip: The drilling instrumentation for 0° keel tibial preparation are labeled with the 0° marking.

Optional Keel Drill

Assemble the 0° keel drill guide on the 0° keel tibial sizing plate by first engaging the posterior tab in the undercut in the 0° keel tibial sizing plate (Figure 93). Then lower the keel drill guide onto the sizing plate ensuring the distal anterior portion of the keel drill guide is flush against the sizing plate (Figure 94).

Hold the keel drill guide and use the 0° keel tibial drill to drill until the drill stop contacts the keel drill guide (Figure 95). After drilling is complete, remove the tibial drill and keel drill guide.

ⓘ Technique Tip: Insert tibial drill into keel drill guide prior to starting tibial drill. Hold the keel drill guide flush against the sizing plate while drilling.

Persona 0° Keel Tibia
 Sizing Plate Size F Left
 42-5399-075-21



25 mm Shorthead
 Holding Pin
 00-5977-056-03



25 mm x 2.5 mm
 Female Hex Screw
 42-5099-025-25



Persona 0° Keel
 Tibial Drill
 42-5399-018-21



Persona 0° Keel
 Tibial Drill Guide
 42-5399-020-20



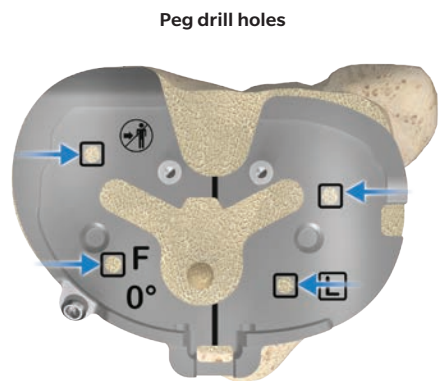


Figure 96

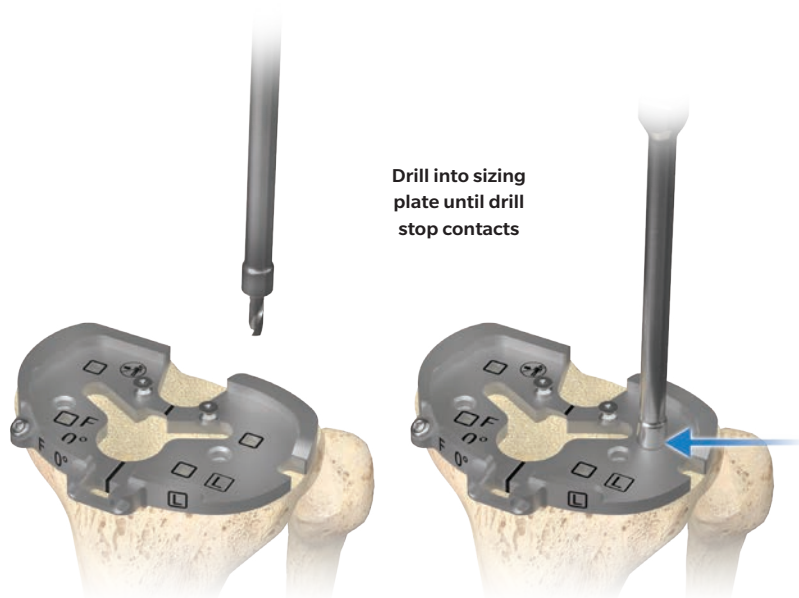


Figure 97

Drill the Peg Holes (Porous Only)

The peg drill holes are outlined by squares representing the pegs on the OsseoTi 0° Keel Tibial Plate (Figure 96). Using the 0° keel tibial peg drill, drill through the 0° keel tibial sizing plate keeping the drill perpendicular to the 0° keel sizing plate until the drill stop contacts the 0° keel tibial sizing plate. Continue drilling until all four of the peg holes have been drilled (Figure 97). After drilling is complete, remove the 0° keel tibial peg drill.

☰ **Technique Tip:** Insert 0° keel tibial peg drill tip into 0° keel tibial sizing plate prior to starting peg drill.

Persona 0° Keel Tibia Sizing Plate Size F Left
42-5399-075-21



25 mm Shorthead Holding Pin
00-5977-056-03



25 mm x 2.5 mm Female Hex Screw
42-5099-025-25



Persona 0° Keel Tibia Peg Drill
42-5399-018-31



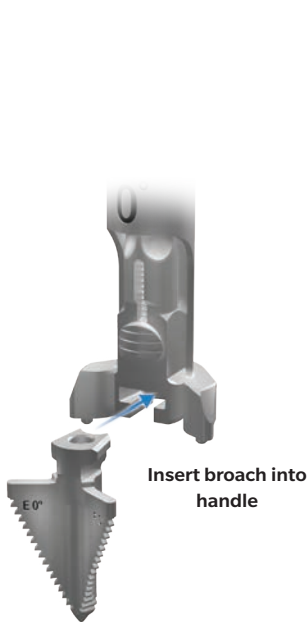


Figure 98



Figure 99

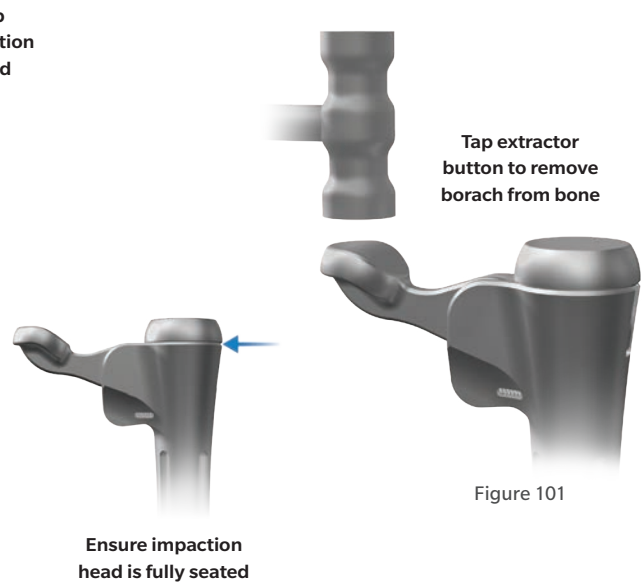


Figure 101

Step 4 Tibial Broaching

Cemented and Porous Tibial Broaching

- ⓘ **Technique Tip:** The broaching instrumentation for 0° keel tibial preparation are labeled with the 0° marking.

Insert the correct-sized 0° keel tibial broach into the 0° keel tibial broach inserter/extractor handle (Figure 98). Retract the impaction head until it locks in the fully retracted position, which will facilitate placement on the tibial sizing plate. After seating the broach inserter/extractor handle on the tibial sizing plate, tap the impaction head once to seat the tibial broach. Impact the broach inserter/ extractor handle assembly with care to prevent fracture of the tibia (Figure 99). Impact until the impaction head bottoms out on the broach inserter/extractor handle stop (Figure 100). While holding the broach inserter/ extractor handle, impact the extraction button to remove the tibial broach from the bone (Figure 101). Avoid dislodging the tibial sizing plate when removing the broach inserter/ extractor handle.

- ⓘ **Technique Tip:** If the tibia bone is sclerotic, it may be necessary to perform the optional keel drill step prior to broaching.

- ⓘ **Technique Tip:** Assure that no metallic debris is present on the magnetic feet of the broach inserter/ extractor handle as this may inhibit the mating with the tibial sizing plate and may introduce unwanted debris into the surgical site.

- ⓘ **Technique Tip:** Make sure that the broach inserter/ extractor handle remains flush and in full contact against the tibial sizing plate. On axis impaction is important for correct tibial placement and fit. When using the broach inserter/ extractor handle ensure the handle does not tip during impaction. The orientation of the broach inserter/ extractor handle is important to ensure proper and complete broaching resulting in full seating of the tibial implant on the bone.

- ⓘ **Technique Tip:** DO NOT extract with mallet blows on either the medial or lateral side of the under surface of the impaction head of the broach inserter/extractor handle. DO NOT attempt to extract the tibial broach with a horizontal or angled blow on any side of the broach inserter/extractor handle. Not following the prescribed technique may jeopardize bone preparation and implant fixation.

Persona 0° Keel Tibia
Sizing Plate Size F Left
42-5399-075-21



25 mm Shorthead
Holding Pin
00-5977-056-03



25 mm x 2.5 mm
Female Hex Screw
42-5099-025-25



Persona 0° Keel Tibia
Broach Size EF
42-5399-022-25



Persona Tibial Broach
Impactor/Extractor Handle
42-5399-023-20



OsseoTi Patella Preparation

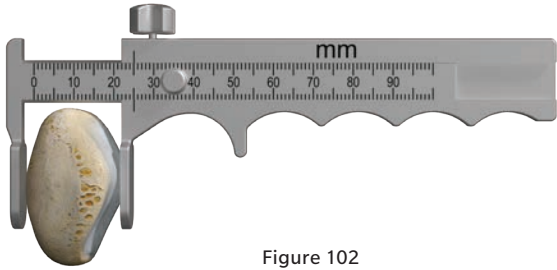


Figure 102



Figure 103



Figure 104

Prepare the Patella

Please refer to the Appendix A of this technique for compatibility and size interchangeability information.

If the surgeon determines that the condition of the patient's patella is satisfactory, it is not necessary to resurface the patella. The geometry, depth, and length of the patella groove on the Persona Femoral Component accommodates the unresurfaced patella.

Place the leg in full extension; evert the patella to at least 90 degrees. Stabilize the patella, using two inverted towel clips. Incise the soft tissue around the patella down to the insertion of the quadriceps and patellar tendons. Sharply dissect through the prepatellar bursa to expose the anterior surface of the patella. This provides exposure for affixing the anterior surface into the patella clamp. All osteophytes and synovial insertions must be removed from the periphery of the patella. Be careful not to damage tendon insertions on the bone. Before making any bone cuts, determine the maximum thickness

of the patella by using the caliper to measure the most prominent anterior-to-posterior dimension (Figure 102). Subtract the implant thickness from the patella thickness to determine the desired amount of bone to remain after resection (Figure 103). Ensure sufficient bone stock remains for the implant pegs after insertion (Figure 104).

ⓘ **Technique Tip:** The caliper has a tolerance of ± 0.25 mm.



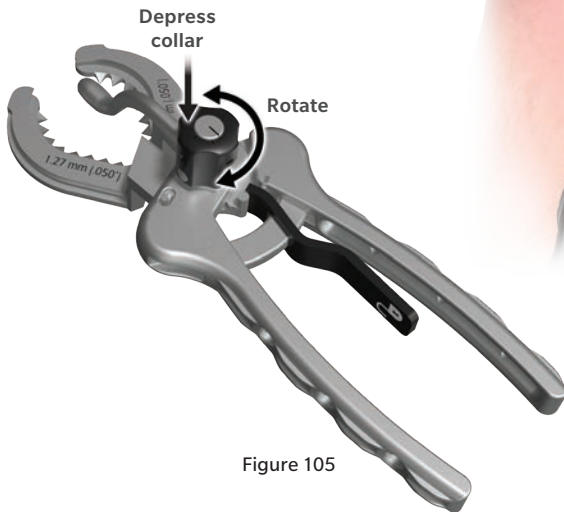


Figure 105

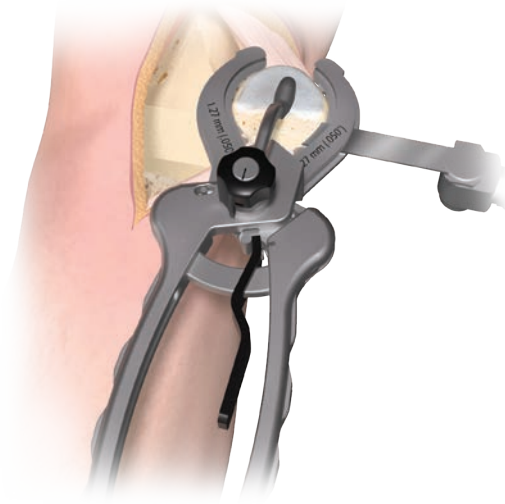


Figure 106



Figure 107

Step 1 Resect the Patella

Refer to the sizing chart for patella dimensions and Persona® femoral component compatibility (Figure 108).

OsseoTi 3-Peg Implant Patella Size & Thickness

| | |
|-----------------|-----------------|
| 29 mm x 9.0 mm* | 38 mm x 10.0 mm |
| 32 mm x 9.0 mm* | 41 mm x 10.0 mm |
| 35mm x 9.5 mm | |

* See Appendix A for complete details on compatibility

Figure 108

Use the patella osteotomy guide with the stylus set for the desired amount of resection. Depress the button on the stylus while twisting to set the stylus at the desired resection level (Figure 105). If significant patellar wear is present, resect less bone.

- **Technique Tip:** Assure that the patella osteotomy guide stylus is referencing the most prominent point on the patella before resecting.
- **Technique Tip:** It is highly recommended using the cutting slot within the osteotomy guide to prepare a flat resection. To have proper in-growth into the underside of the implant, the porous surface needs to be in contact with the bone.

Apply the patella osteotomy guide medially and laterally with the jaws at the osteochondral juncture with the handles of the jig oriented toward the patient's foot. Apply the guide with the jaws parallel to the dorsal surface of the patella, while positioning the patella osteotomy guide stylus over the most prominent point on the patella. Make the resection with a 1.27 mm (0.050 inch) thick saw blade (Figure 106). It is important to cut the patella flat so that the OsseoTi surface of the implant can have optimal contact with the prepared patella. Remove the patella osteotomy guide.

- **Technique Tip:** To facilitate placing the osteotomy guide around the patella, slide the teeth of the guide down along the articular surface of the patella, while slowly opening the jaws pushing soft tissue away.
- **Technique Tip:** To facilitate unlocking the patella osteotomy guide from the patella, apply slight gripping pressure on the handles of the patella osteotomy guide and depress the release lever to unlock the patella osteotomy guide (Figure 107).





Figure 109

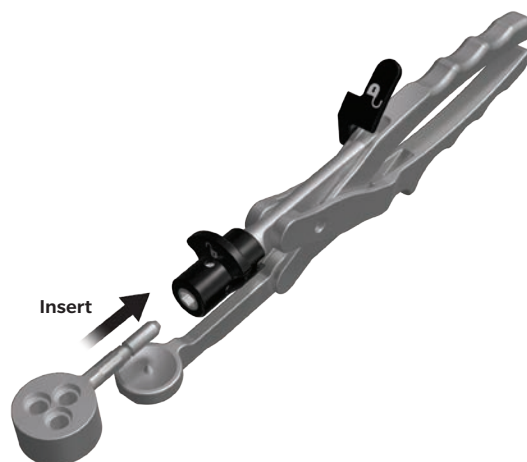


Figure 110

Step 2 Sizing the Patella

Using the patella sizing templates, select the maximum-sized OsseoTi 3-Peg patella that does not overhang the prepared surface. Medialization of the patella implant should be considered to ensure it doesn't overhang. (Figure 109).

ⓘ Technique Tip: Use the patella sizing templates to inspect the surface of the resected patella to ensure that a flat cut has been made. Make note of any irregularities or lateral ridge(s) (from blade deflection) on the prepared surface and recut as needed to allow for flush seating of the patella implant to the prepared bone.

ⓘ Technique Tip: Do not drill through the center hole of the patella sizing template.

ⓘ Technique Tip: If a size 26mm patella is templated, switch to the cementing technique. The size 26 mm patella is only available as an All-Poly cemented patella implant.

Insert the appropriately sized NexGen patella peg drill guide into the NexGen patella clamp in the proper orientation (Figure 110).

NexGen Patella Sizing Template
00-5903-041-00



NexGen Patella Clamp
00-5903-020-00



NexGen Patella Peg Drill Guide
00-5903-023-35



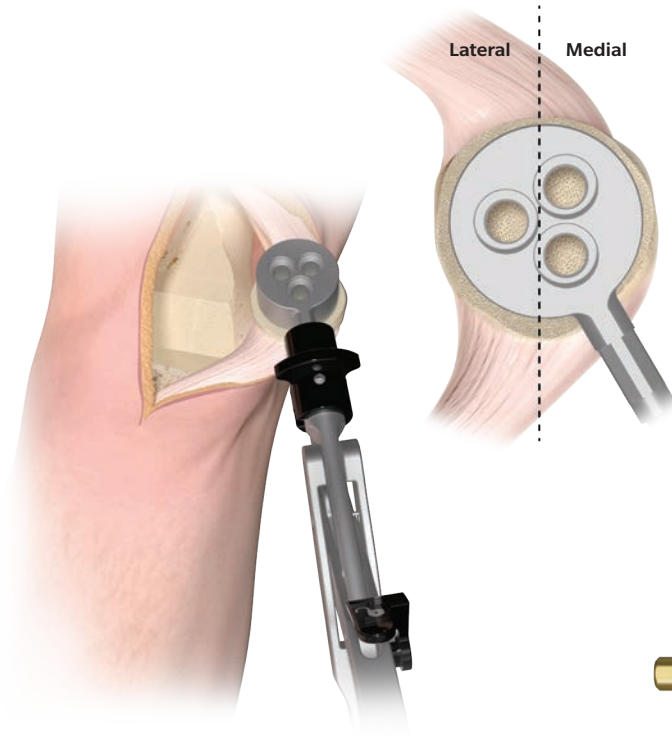


Figure 111



Figure 112

Step 3 Preparation for OsseoTi Pegs

Place the NexGen patella clamp with attached peg drill guide over the cut surface of the patella, centered slightly toward the medial facet with the clamp oriented so two of the holes are biased toward the medial side of the patella (Figure 111). Once positioned, apply pressure to the NexGen patella clamp handles to secure the guide to the patella surface.

ⓘ Technique Tip: For hard/sclerotic bone it may be necessary to tap the patella peg drill guide face with a mallet to fully seat the drill guide's spikes into the bone. This is necessary to ensure that the peg holes stay perpendicular to the resected surface and that adequate bone is removed during drilling to properly seat the implant during insertion.

Select the Persona Press-fit Patella Peg Drill, 5.7 mm (Figure 112) and attach it to a power surgical drill. The press-fit patella peg drill shaft is coated in Titanium Nitride (Gold Color) for ease of product identification.

WARNING: To ensure proper press-fit with the pegs on the OsseoTi Patella implant, the Persona Press-fit Patella Peg Drill must be used for the peg preparation and progressed into the drill guide until the drill stop makes contact with the guide.

NexGen Patella Clamp
00-5903-020-00



NexGen Patella Peg Drill Guide
00-5903-023-35



Persona Press-fit Patella Peg Drill, 5.7mm
42-5903-080-00



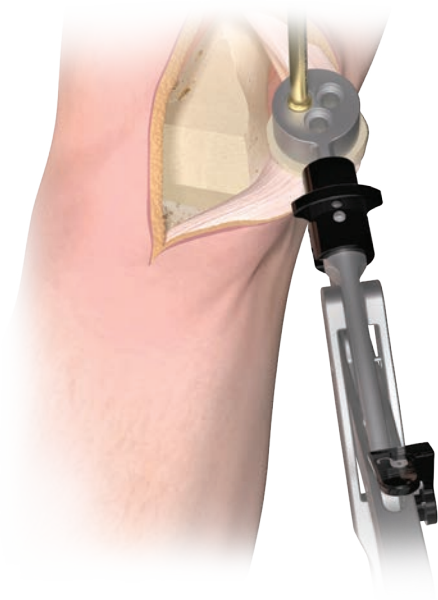


Figure 113

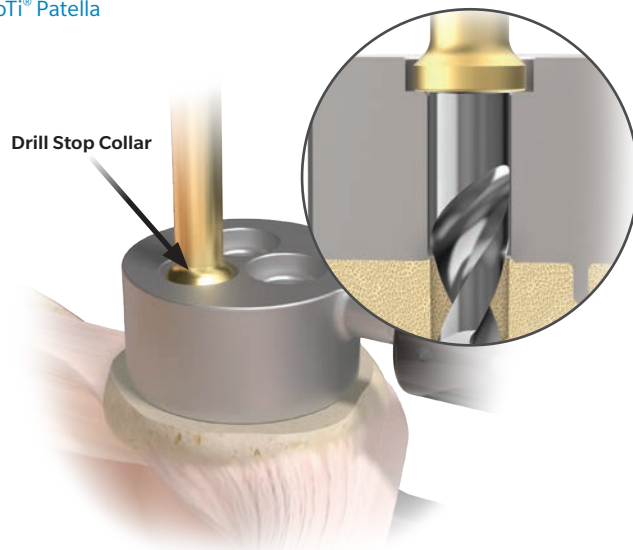


Figure 114

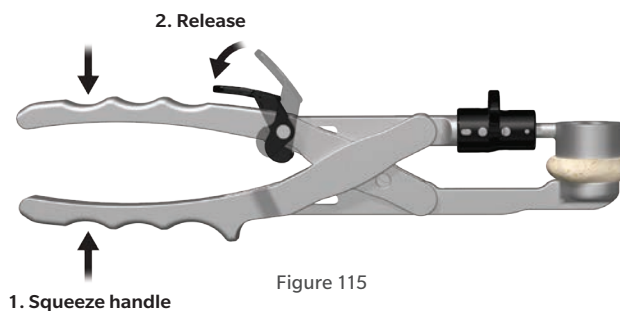


Figure 115

Use the Press-fit Patella Peg Drill and drill through the patella peg drill guide (Figure 113), making sure the drill's stop collar contacts the counterbore top surface of the drill guide (Figure 114). The top of stop collar will be in line with the top surface of the drill guide.

WARNING: Failure to fully seat the drill (until the drill's stop collar contacts the drill guide) will result in a shallow peg preparation which could prevent the implant from achieving surface to surface contact with the bone.

Once all three peg holes have been drilled remove the drill and drill guide.

☰ **Technique Tip:** To facilitate unlocking the patella clamp from the patella, apply slight gripping pressure on the handles of the patella clamp and depress the release lever to unlock the patella clamp (Figure 115).

NexGen Patella Clamp
00-5903-020-00



NexGen Patella Peg Drill Guide
00-5903-023-35



Persona Press-fit Patella Peg Drill, 5.7mm
42-5903-080-00





Figure 116

Size Specify Provisionals
 Sizes 29, 32, 35, 38, 41

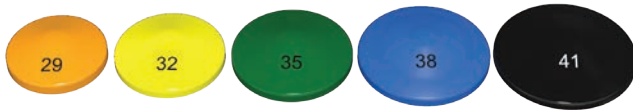


Figure 117

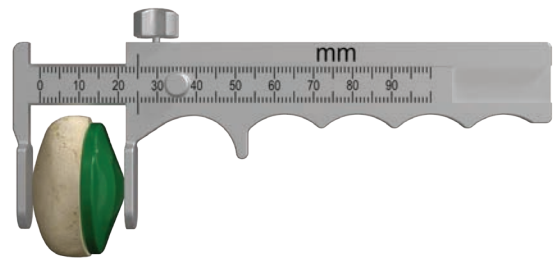


Figure 118

Step 4 Perform Trial Reduction

In this step, a trial reduction is performed to check component position, patellar tracking, range of motion (ROM), and joint stability. Once the patella is resurfaced and the peg holes have been drilled, insert the appropriate OsseoTi 3-peg patella provisional; ensuring that the pegs are fully seated and that the base of the provisional is uniformly contacting the resected/reamed patella (Figure 116). Perform a trial reduction prior to insertion of the OsseoTi patella implant by taking the knee through a ROM. The patella should track normally throughout the ROM without tendency for tilting or lateral subluxation.

Note: The provisionals are color coded, each size is a different color (Figure 117). This will correspond to the appropriate clamp pad size used during final implantation.

Technique Tip: If the trial reduction assessment determines additional bone resection is required to modify the patella implant positioning, it is recommended to utilize a cemented technique and switch to Persona cemented All-poly patella implant.

Technique Tip: Use the patella provisional as a final check on the flatness of resected surface. It is also recommended that overall thickness of the prepared patella with provisional be measured in order to reference this overall thickness during final implant insertion (Figure 118).



Trial Assessment

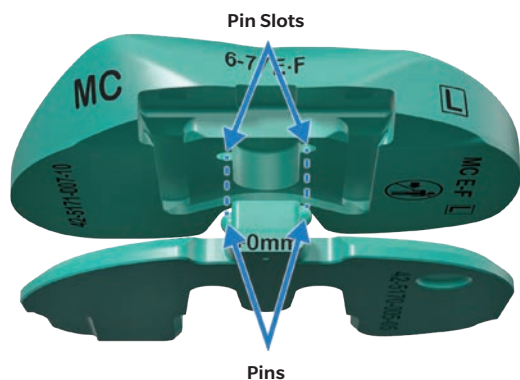


Figure 119



Figure 120

Tibial Articular Surface Provisional (TASP) Assembly

The TASP consists of three parts: a TASP bottom, a TASP shim, and a TASP top. Select the TASP bottom that matches the tibial sizing plate or tibial baseplate implant. Select the TASP top that mates with both the TASP bottom and the femoral provisional or component as marked on the anterior face of the TASP top (Figure 119). In addition to the markings on the parts, the same colors are used for the mating TASP tops and bottoms. Axially align the pin slots on the TASP top with the pins on the TASP bottom during assembly as these parts must be assembled BEFORE the TASP shim can be used (Figure 120). Select the set of TASP shims that correspond with the TASP bottom being evaluated.

ⓘ **Technique Tip:** There are two TASP bottom thicknesses +0 mm and +6 mm. Use +0 mm bottom for 10–14 mm constructs and the +6 mm bottom for 16–20 mm constructs.

ⓘ **Note:** TASP bottom pins are offset to prevent assembly of left TASP tops on right TASP bottoms and vice versa.

- ⓘ **Technique Tip:** As shown on the anterior face of the TASP top, confirm the correct constraint, femoral compatibility, tibial size, and side.
- ⓘ **Technique Tip:** Apply gentle manual pressure without impacting the TASP construct with either a mallet or hand. The TASP construct includes the TASP top, bottom, shim, and tibial sizing plate handle.
- ⓘ **Technique Tip:** If using the tibial sizing plate during the trialing phase, please assure that the necessary male-headed screws/pins are removed from the anterior surface of the tibial sizing plate to avoid interference and potential damage to the TASP.

**Persona TASP Top Left
Medial Congruent 6-7/EF**
42-5171-007-10



**Persona TASP Left
EF +0 Bottom**
42-5171-005-05



**Persona TASP Left
EF +6 Bottom**
42-5171-005-15



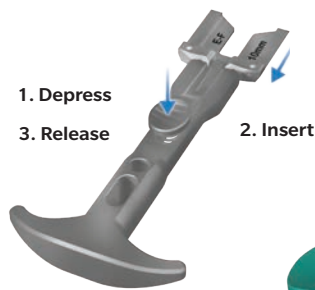


Figure 121



Figure 122



Figure 123



Figure 124



Figure 125



Figure 126

The shims (10, 11, 12, 13, and 14 mm) are not side-specific. Attach the tibial sizing plate handle to the appropriate 10 mm shim (Figure 121). While holding the TASP top and bottom together with one hand, lock the TASP top and bottom together by inserting the appropriate 10 mm shim with the tibial sizing plate handle (Figure 122). The 10 mm shim will create a TASP construct which matches the thickness of the thinnest tibial bearing implant, 10 mm (Figures 123 and 124).

ⓘ Technique Tip: During assembly of the TASP construct, slide the shim in using a direct anterior approach between the TASP top and bottom. To avoid inadvertent separation, maintain slight pressure between the TASP top and bottom while inserting the shim.

The shims are incremented by 1 mm to create TASP constructs of 10 mm, 11 mm, 12 mm, 13 mm, or 14 mm to match the implant offering. The +6 mm bottoms are included for instances where the TASP construct needs to be 16 mm, 18 mm, or 20 mm. In these circumstances,

the 10 mm, 12 mm, and 14 mm shims are to be used to create the respective TASP constructs.

ⓘ Note: The maximum thickness of available CR implants is 18 mm. MC, UC, and PS implants are available in thicknesses up to 20 mm. 15 mm, 17 mm, and 19 mm thicknesses are NOT available. CPS implants are available in even thicknesses up to 20 mm.

It is recommended that the thinnest TASP construct (10 mm) be inserted into the joint space, with the knee at greater than 30 degrees of flexion (Figure 125), to perform an initial ROM assessment.

If a thicker construct is needed to appropriately fill and balance the joint space, place the knee in approximately 5–15 degrees of flexion (Figure 126) to facilitate *in vivo* removal and insertion of the shims with the tibial sizing plate handle.

| Persona CR Femoral Provisional Size 7 Left | Persona TASP Top Left Medial Congruent 6-7/EF | Persona TASP Left EF +0 Bottom | Persona TASP Left EF +6 Bottom | Persona Tibial Sizing Plate Handle | Persona TASP SHIM EF 10 mm | Persona 0° Keel Tibia Sizing Plate Size F Left |
|---|---|---|---|--|---|---|
| 42-5027-062-01 | 42-5171-007-10 | 42-5171-005-05 | 42-5171-005-15 | 42-5399-017-00 | 42-5279-005-00 | 42-5399-075-21 |
|  |  |  |  |  |  |  |

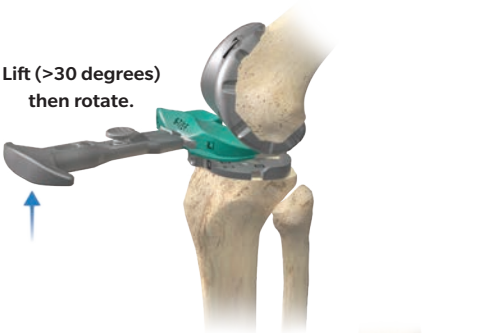
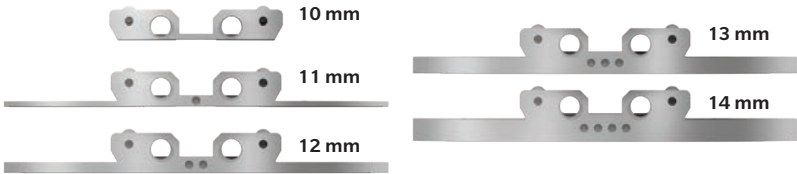


Figure 127



Figure 128



TASP Shim/Construct Thickness

Anterior divots in the shim correspond to the overall construct thickness as shown in the image above.

| | Color Coded | Side Specific | Shared Sizing* |
|------------------------|-------------|---------------|----------------|
| Tibial Sizing Plate | No | Yes | No |
| Articular Surface Tops | Yes | Yes | Yes |
| +0 Bottoms | Yes | Yes | Yes |
| +6 Bottoms | Yes | Yes | Yes |
| Shims | No | No | Yes |

*Shared Sizing - A and B, C and D, E and F, G and H Tibial Sizing Plates have common TASP Tops, Bottoms and Shims respectively.

Figure 129

The entire TASP construct can be removed to exchange the shims of the TASP construct. This is accomplished by flexing the knee greater than 30 degrees, then lifting the tibial sizing plate handle while attached to the TASP construct. Once the anterior lip of the TASP bottom is above the anterior rail of the tibial sizing plate (Figure 127), rotate the TASP out of the joint space medially or laterally (Figure 128). This will aid in preventing unwanted shim disassembly during TASP removal.

ⓘ Technique Tip: Varus/Valgus forces may make it difficult to remove the TASP construct. To aid in the removal of the TASP and prevent breakage, ensure that the joint is in a neutral position when removing the TASP construct.

As shown (Figure 129), size A and B tibias, size C and D tibias, size E and F tibias, and size G and H tibias, share side-specific tibial bottoms, tibial tops, and color, respectively.

ⓘ Note: Do NOT use 48 mm screws for tibial sizing plate fixation. 48 mm screw are not recommended due to potential bone perforation.

| | | | | | | |
|---|---|---|---|--|---|---|
| Persona CR Femoral Provisional Size 7 Left 42-5027-062-01 | Persona TASP Top Left Medial Congruent 6-7/EF 42-5171-007-10 | Persona TASP Left EF +0 Bottom 42-5171-005-05 | Persona TASP Left EF +6 Bottom 42-5171-005-15 | Persona Tibial Sizing Plate Handle 42-5399-017-00 | Persona TASP SHIM EF 10 mm 42-5279-005-00 | Persona 0° Keel Tibia Sizing Plate Size F Left 42-5399-075-21 |
|  |  |  |  |  |  |  |

Consider resecting the PCL if the femur appears to book open.



Figure 130

Trial Range of Motion

Check ligament stability in extension and in 30 degrees, 60 degrees, and 90 degrees of flexion. Attempt to distract the joint in flexion to ensure that it will not distract. If a posterior stabilized component is used, hyperflex the knee and verify that the spine still engages the cam. Insert the patellar provisional onto the resected patellar surface. Perform a ROM to check patellar tracking. When component position, ROM, and joint stability have been confirmed, remove all provisional components.



If a CR femoral implant is to be used and the PCL is recessed or becomes deficient intra-operatively, the PCL should be fully resected and the Medial Congruent (MC) or ultracongruent (UC) TASP should be trialed to assure desired ROM and joint stability prior to bearing implant selection.

When trialing with either a CR or MC insert and the PCL is retained, posterior soft tissue tightness may occur, resulting in the femur booking open (Figure 130). Should this occur, consider resecting the PCL. If the PCL is resected, either a MC or UC bearing should be used.

If unacceptable flexion/extension gap imbalances exist, refer to the "Balance Flexion/Extension Gaps" section of Appendix B of the Persona Knee Surgical Technique (3914) for potential options.

The constrained posterior stabilized (CPS) TASP may also be assessed if further stability is needed when using cemented non-porous implants. Additional information for this product may be found in the Constrained Posterior Stabilized (CPS) Surgical Technique (97-5026-072-00). When greater varus/valgus constraint is needed and/or stems or augments are required, the surgeon should consider using a revision implant system.

- ⓘ **Technique Tip:** If the TASP construct is used with the femoral and/or tibial implants, contact with bone cement should be avoided to prevent potential damage to the TASP components.
- ⓘ **Technique Tip:** The articular surface inserter should not be used with the TASP.
- ⓘ **Technique Tip:** Use only the tibial sizing plate handle to remove the TASP construct. The use of other instruments may damage or break the TASP.

| Persona CR Femoral Provisional Size 7 Left | Persona TASP Top Left Medial Congruent 6-7/EF | Persona TASP Left EF +0 Bottom | Persona TASP Left EF +6 Bottom | Persona TASP SHIM EF 10 mm | Persona 0° Keel Tibia Sizing Plate Size F Left |
|---|---|---|---|--|---|
| 42-5027-062-01 | 42-5171-007-10 | 42-5171-005-05 | 42-5171-005-15 | 42-5279-005-00 | 42-5399-075-21 |
|  |  |  |  |  |  |

Implantation

Tibial Implantation

After the implants have been chosen, make a final check to ensure that the size chosen for the femoral, tibial, and bearings are compatible. Prior to implantation the resected tibial bone surface must be flat and free of bone debris and fragments. Sublux the tibia anteriorly to allow adequate clearance to insert the tibial implant into the prepared bone.

The patient's bone quality must be assessed for density and quality to ensure adequate support and fixation of the tibial implant. Bone stock of insufficient quality and/or density may not be capable of adequately supporting a Persona OsseoTi Keel Tibial Baseplate. If the bone stock is of questionable quality or density, a Persona Cemented Keel Tibial Baseplate should be used in place of the porous component and cemented to the proximal tibia. The keel preparation for the Cemented Keel Tibial Baseplate is the same as the OsseoTi Keel Tibial Baseplate. There are no additional steps prior to cementing the cemented component.

ⓘ **Technique Tip:** If the OsseoTi tibial component is impacted and it is determined that the fit is not acceptable, the component may be removed but a cemented component must then be applied. A press-fit component cannot be removed and reinserted. There are no additional steps prior to cementing the Cemented tibial component.

Cemented Tibia Cement Application

If a tourniquet above the knee is not already in use, place and/or inflate throughout preparation of the bone cementation, as well as mixing, application and hardening of the bone cement.

If the resected surfaces of the tibia is sclerotic, it may be necessary to perforate the tibia by drilling with the 3.2mm drill 3-4mm deep, spaced 5 to 8mm apart to improve cement penetration. Prior to cementing the implants, pulse lavage to remove unwanted debris from the resected bone surfaces

and the joint space. Dry with a clean, dry lap sponge. Next, mix the cement following the manufacturer's guidelines for cement prep including but not limited to mix, work, and set time. Use of a vacuum mixing cartridge is recommended as well as application of new gloves.

WARNING: Do not apply substances other than bone cement to the tibial implant (i.e. do not dip implant into antibiotics or other substances).

ⓘ **Note:** Replacing gloves prior to cementing to ensure cement adhesion to implant is recommended. Keep the implant clean and free of debris prior to cementing.

As soon as the cement properties permit, apply a layer of cement on the underside of the tibial baseplate and around the keel of the implant. The cement should just overfill the pockets on the underside of the baseplate, up to 1mm proud posteriorly and 2mm anteriorly. Apply cement to proximal surface of tibia and broached keel cavity and pressurize the cement in its low viscous state to assure maximal penetration into the trabecular bone, striving for penetration of 3-4mm.

ⓘ **Technique Tip:** Use of a cement gun/cartridge equipped with pressurizing nozzle is recommended to deliver and pressurize into the prepared holes and across the flat surface, or cement may be applied manually and pressed forcefully into the bone using a ½" (12.7mm), or wider, flat osteotome.

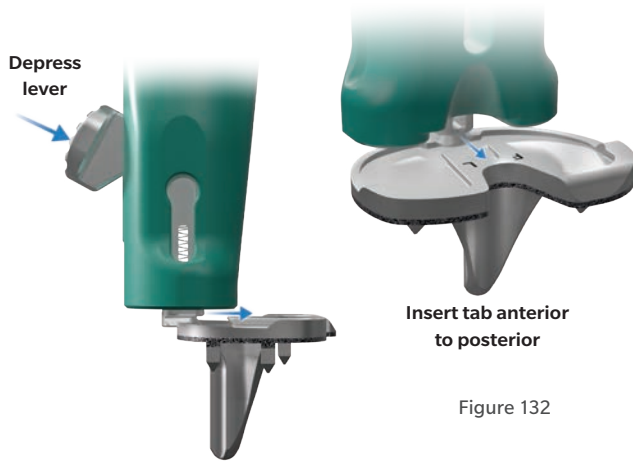


Figure 131

Figure 132

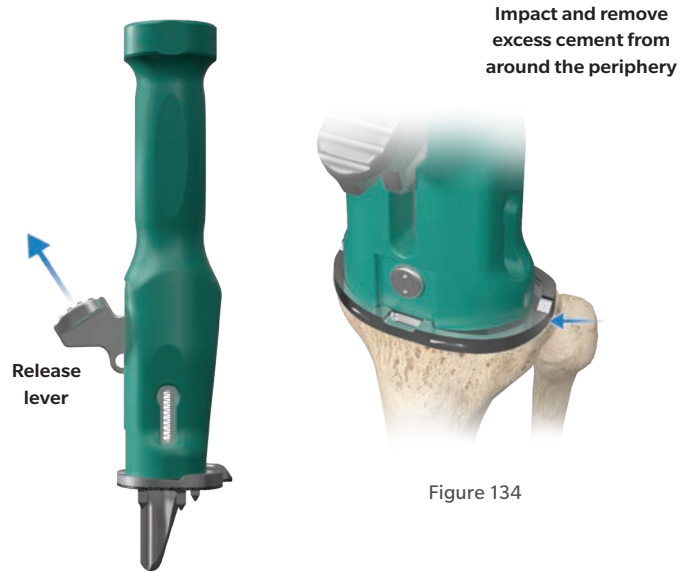


Figure 133

Figure 134

Cemented and Porous Tibia Implantation

Depress the lever of the tibial inserter to extend the metal distal tab (Figure 131). Insert the tab into the implant's dovetails in the central portion of the tibial implant. Slide the tibial inserter posteriorly until the tab engages the dovetails (Figure 132). Release the lever to secure the tibial inserter to the tibial implant. Ensure the tibial inserter is seated flush to the proximal surface of the tibial implant (Figure 133).

Place the tibial baseplate implant onto the tibia by hand, aligning the keel of the implant with the broached cavity. Impact the tibial baseplate, using the tibial impactor head until fully seated onto the tibia's proximal surface (Figure 134).

ⓘ **Technique Tip:** Be sure to maintain the trajectory of tibial impaction for the cementless tibial baseplate to maximize press-fit and initial fixation.

| | | |
|---|--|--|
| Persona 0° OsseoTi Left Size F Tibia 42-5350-075-01 | Persona 0° Cemented Left Size F Tibia 42-5360-075-01 | Persona Tibial Inserter Size EF 42-5398-092-05 |
|---|--|--|





Figure 135



Figure 136

To release the inserter from the implant, depress the lever on the tibial inserter. The handle will move in a superior direction away from the tibial implant (Figure 135). Tilt the handle posteriorly to disengage the distal tab of the inserter from the plate (Figure 136). After the inserter has been removed, the inserter can be used as a non-locking inserter if desired. The uncoupled tibia impactor can also be used to finish seating the tibial implant, for instructions continue to Optional Uncoupled Impactor Final Impaction.

WARNING: Do not impact the release lever on the inserter.

Note: After impaction, it is important to ensure that the tibial implant is in uniform contact with the resected tibia, and that no gaps are present between the implant and bone. Fixation, support and/or stability may be insufficient if gaps are present between the implant and bone, especially with porous components.

Cemented Tibia Cement Removal

Thoroughly remove any excess cement from the periphery in a consistent manner. The curved tonsile/hemostat can be used to remove excess cement. Place a trial bearing into the baseplate and bring knee to fully extension to maintain pressure on tibia until cement is fully cured. Allow the cement to fully cure before performing a trial ROM or inserting the bearing implant. Once cement has fully cured removal of all residual cement, thoroughly irrigate the joint and assess ROM using trial bearing.

Confirm that all cement has been removed from the proximal surface of the tibial baseplate implant especially posterior near the locking mechanism.

| | | |
|--|---|---|
| Persona 0° OsseoTi Left Size F Tibia 42-5350-075-01 | Persona 0° Cemented Left Size F Tibia 42-5360-075-01 | Persona Tibial Inserter Size EF 42-5398-092-05 |
|--|---|---|



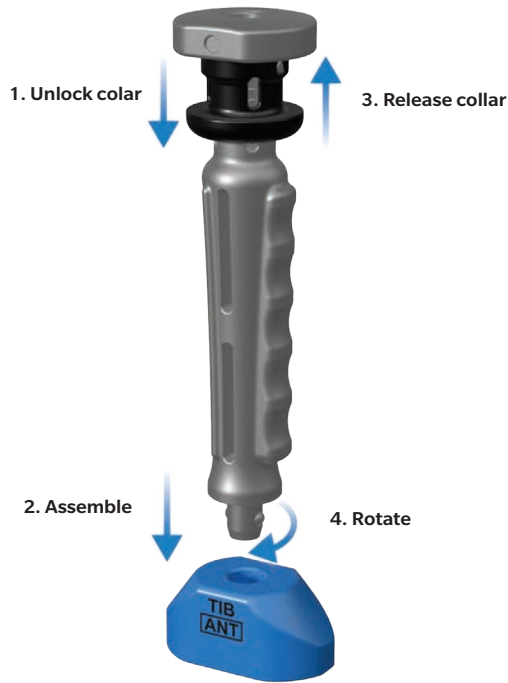


Figure 137



Figure 138

Optional Uncoupled Impactor Final Impaction

Assemble the quick connect handle to the tibial impactor head. Unlock collar and hold, insert handle into impactor pad, release collar, and rotate handle until “click” is heard (Figure 137). Place the tibial impactor pad flush against the proximal surface of the tibial baseplate. Impact the tibial baseplate, using the tibial impactor pad until fully seated onto the tibia’s proximal surface (Figure 138).




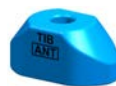
| | | | |
|---|---|---|---|
| Persona 0° OsseoTi Left Size F Tibia 42-5350-075-01 | Persona 0° Cemented Left Size F Tibia 42-5360-075-01 | Quick Connect Handle 00-5901-034-00 | Persona Tibial Impactor Pad 42-5870-007-21 |
|  |  |  |  |



Figure 139



Figure 140

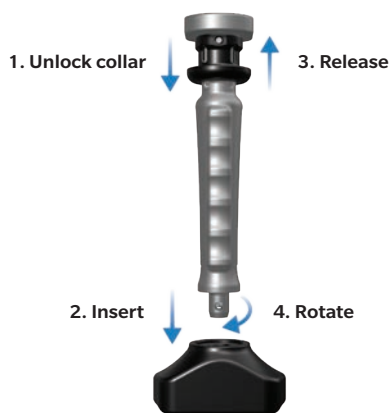


Figure 141



Figure 142



Figure 143

Femoral Implantation

Technique Tip: Prior to inserting implants remove provisionals and use pulse lavage to remove unwanted debris from the resected bone surfaces and the joint space.

Cement may be used to fix a Persona PPS Femoral Component. If the resected surfaces of the femur are sclerotic, drill multiple holes with a small drill (2.0mm - 3.2mm) to improve cement intrusion. If using cement to implant the femoral component, place a layer of cement on the underside of the prosthesis and in the holes drilled in the femur.

With the knee in 70 degrees to 90 degrees of flexion, retract the soft tissue in the desired manner. Attach the femoral inserter/extractor to the femoral component (Figures 139 & 140). Insert the femoral component onto the distal femur by translating the component laterally until the lateral peg aligns with the drill hole in the lateral femoral condyle. Take care to avoid scratching the implant component surfaces. After the femoral component is placed on the femur and the femoral inserter/extractor is removed, the femoral impaction head/inserter assembly can be used to fully seat the implant onto the femur. If this method is used, the femoral inserter/ extractor handle must be in the closed and locked position. Ensure that soft tissue is not trapped beneath the implant. Alternatively, assemble the quick connect

handle to the femoral impactor head (Figure 141). Use this assembly to fully seat the femoral implant (Figure 142). Remove retractors, and check the medial and lateral sides to make sure the femoral implant is fully impacted distally. If using cement, remove any excess in a thorough and consistent manner.

Technique Tip: Apply gentle upward force to ensure femoral component does not flex as it is impacted.

Technique Tip: Carefully engage the pegs or the intercondylar box of the femoral implant into the pre-drilled peg holes or resected box and impact the femur onto the bone until stable. Periodically check the alignment with the bone cuts to ensure the implant is seated properly.

Technique Tip: If no gap is visible beneath the distal surface of the implant and the bone, the implant is fully seated. Small gaps between the PPS surface and the chamber bone cuts may be visible and are acceptable (Figure 143).

Technique Tip: If the femoral component is impacted and it is determined that the fit is not acceptable, the component may be removed but a cemented component must then be applied. A press-fit component cannot be removed and reinserted.

**Persona CR Left Size 7
PPS Standard Femur**
42-5086-062-01



**Persona PS Left Size 7
PPS Standard Femur**
42-5066-062-01



**Quick Connect
Handle**
00-5901-034-00



**Femoral Impactor
Head**
00-5901-032-00



**Persona 0° OsseoTi
Left Size F Tibia**
42-5350-075-01



**Persona 0° Cemented
Left Size F Tibia**
42-5360-075-01



**Persona Femoral
Inserter/Extractor**
42-5099-092-00





Figure 144

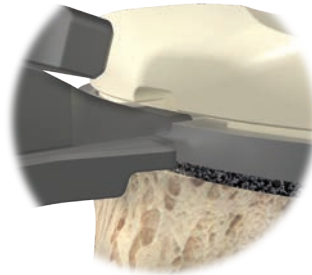


Figure 145



Figure 146

Bearing Implantation

The articular surface inserter applies both downward and rearward forces to aid in the insertion of the bearing onto the tibial base plate. Choose the correct tibial bearing based on size, side, constraint and thickness as determined by the trial range of motion. Place the bearing onto the tibial base plate. Apply pressure anterior to posterior to properly engage the tibial component and tibial bearing for final seating. This is necessary to allow the inserter to properly engage the tibial component and tibial bearing for final seating (Figure 144). Steady the surface of the base plate with one hand by applying downward pressure near the posterior cruciate cutout.

☹ **Technique Tip:** Insert a bearing only once. Never reinsert the same bearing onto a tibial base plate.

Engage the hook on the articular surface inserter with the mating slot in the front of the base plate and close the lever with your index finger. This locks the inserter to the tibial plate (Figure 145). Squeeze the handle of the articular surface inserter to seat the bearing (Figure 146). Open the lever and remove the articular surface inserter.

Alternatively the bearing can be locked into the tibial plate as described above, prior to tibial plate implantation. If PS femoral implants are used, the femoral implant should be implanted before the tibial implant to avoid the excessive joint distraction required to clear the post while implanting the PS femoral implant. If CR femoral implants are used, the tibial implant should be implanted prior to the femoral implant to facilitate the removal of excess cement from the posterior aspect of the tibia, prior to femoral implantation.

☹ **Technique Tip:** Only in vivo assembly of the ultracongruent bearing is recommended because the design of the ultracongruent bearing precludes cement removal from the PCL cutout area at the tibial baseplate/bone interface.

Persona 0° OsseoTi
 Left Size F Tibia
 42-5350-075-01



Persona Articular
 Surface Inserter
 42-5299-001-00



Persona MC Tibial Articular
 Component 6-7/EF Left 10 mm
 42-5121-007-10





Figure 147



Figure 148

Assemble the quick connect handle to the tibial impactor head. Unlock collar and hold, insert quick connect handle into tibial impactor head, release collar, and rotate handle until “click” is heard. Position the tibial plate bearing construct onto the tibia and use the tibial impactor to impact it until fully seated (Figure 147). Thoroughly remove any excess cement in a consistent manner.

ⓘ Technique Tip: Do NOT impact or lever the articular surface inserter or extractor tools when they are attached to the tibial plate as this may disrupt the fixation of the tibial plate to the bone and/or cause damage to the implant or instrument. Also, do not impact the bearing.

To remove a bearing from the baseplate, engage the hook on the articular surface removal instrument with the mating slot on the front of the baseplate and squeeze the handle to disengage the bearing from the baseplate. The articular surface removal instrument should not be used for provisional removal.

**Persona CR Left Size 7
PPS Standard Femur**
42-5086-062-01



**Persona 0° OsseoTi
Left Size F Tibia**
42-5350-075-01



**Persona MC Tibial Articular
Component 6-7/EF Left 10 mm**
42-5121-007-10



Tibial Impactor Head
00-5901-033-00



**Articular Surface
Removal Instrument**
00-5977-021-00





Figure 149

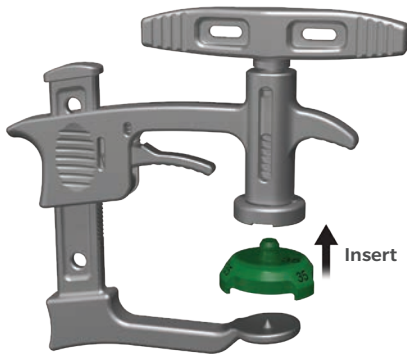


Figure 150

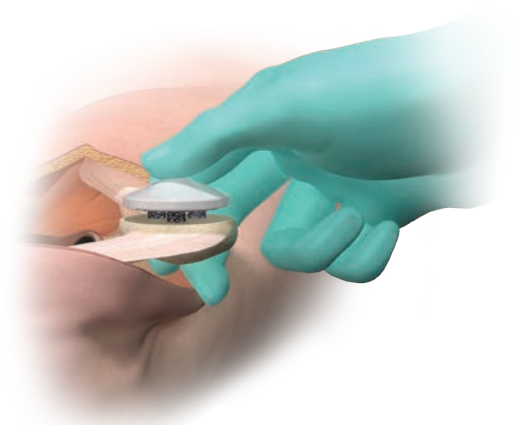


Figure 151

OsseoTi Patella Implantation

Patella Clamp Assembly

Select the appropriate size porous 3-peg patella clamp pad that corresponds to the size of implant selected and attach to porous 3-peg patella clamp (Figure 149). The color of the clamp pad will match the provisional used on the previous surgical step. The patella clamp pads snap onto the clamp by pressing the tip of the pad into the mating hole on the clamp (Figure 150). Rotate clamp handle counterclockwise before using to ensure clamp is fully retracted as shown in Figure 150.

Insert OsseoTi Patella Implant

Start insertion of Persona OsseoTi 3-Peg Patella implant into the prepared patella by hand. Locate and align the pegs on the implant to the drilled peg holes and use thumb pressure to begin seating the patella implant (Figure 151).

☰ Technique Tip:

- Engage all 3 implant pegs in the patella bone symmetrically to avoid eccentric insertion. If the patella implant begins to engage at an angle or has tissue caught under the periphery of the implant, reposition the implant and restart the insertion with hand and thumb pressure.
- If the implant pegs again resists engagement because of hard sclerotic bone, additional insertion pressure may be applied with the patella clamp and pad, with careful attention to coaxial alignment of the 3 pegs in the holes.
- Once the OsseoTi Pegs are initially engaged and properly aligned, the patella clamp is used to fully seat the implant.

WARNING: The 3-peg patella clamp cannot correct for misalignment, and care must be taken to avoid fracturing the patella bone by applying pressure to a misaligned implant with the clamp.

Persona Porous 3-Peg
 Patella Clamp
 42-5903-070-00



Persona Porous 3-Peg Patella
 Clamp Pads
 42-5903-075-29/32/35/38/41



Persona OsseoTi
 3-Peg Patella
 42-5405-000-35



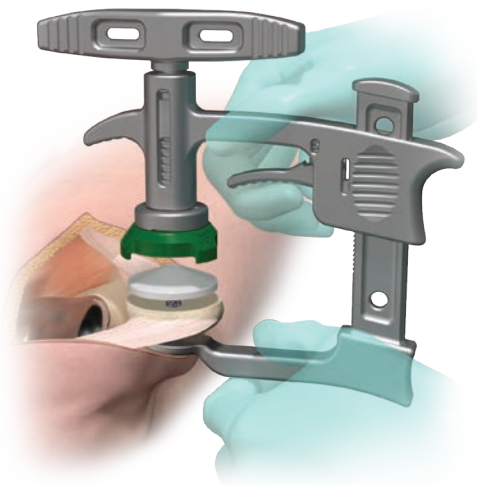


Figure 152

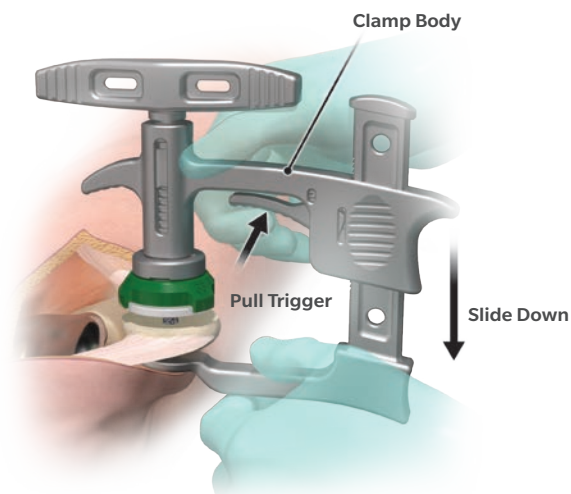


Figure 153

Fully open the jaws on the patella clamp and position the foot of the clamp on the anterior surface of the patella (Figure 152). Adjust clamp head height by pulling the trigger and slide the body down, so that the clamp pad applies a light load and the tabs on the pad wrap around perimeter of the patella implant (Figure 153).

Note: The trigger on the clamp allows for a macro adjustment on the clamp. If the initial seating of the clamp pad on the patellar implant needs to be adjusted, pull the trigger to slide the clamp's body back up.

**Persona Porous 3-Peg
Patella Clamp**
42-5903-070-00



**Persona Porous 3-Peg Patella
Clamp Pads**
42-5903-075-35



**Persona OsseoTi
3-Peg Patella**
42-5405-000-35



1. Rotate Handle

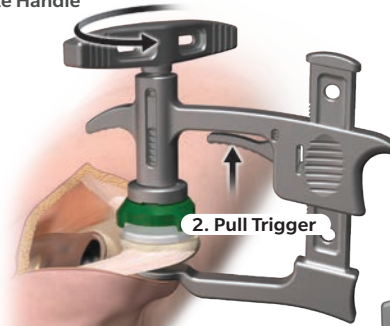


Figure 155



Figure 154

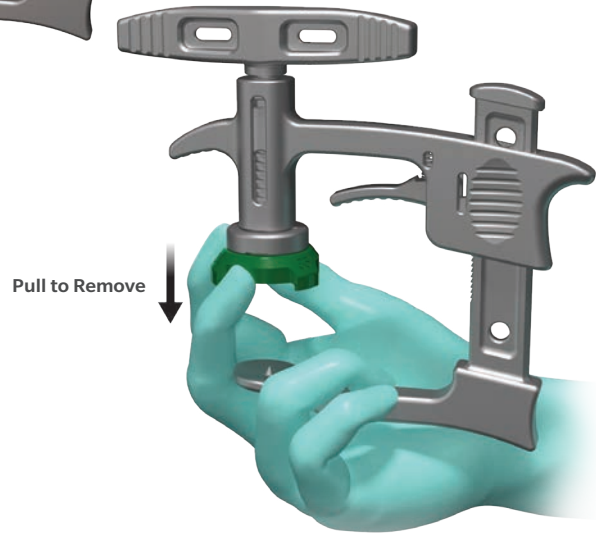


Figure 156

Once the clamp pad is positioned over the articular surface of the implant, carefully rotate the handle on the clamp in the clockwise direction to apply constant, firm pressure to the implant on the patella surface (Figure 154). Continue to press the implant until the OsseoTi surface of the implant is fully seated flush on the posterior surface of the native bone. Use visual and tactile feedback to ensure the patella is fully seated. Care should be taken to avoid over-compressing the implant and patella bone. Once fully seated, remove the clamp from the joint.

ⓘ **Note:** The OsseoTi surface of the patella implant slightly extends past the underside of the polyethylene surface. **There may be a slight gap between the peripheral polyethylene and the bone surface when the OsseoTi surface is fully seated.** A scalpel blade can be used to assess the OsseoTi material is fully contacting the prepared surface.

ⓘ **Technique Tip:** To facilitate removing the 3-peg patella clamp and pad from the patella, first rotate the handle in the counterclockwise direction to reduce the clamping load and then actuate the trigger on the clamp to fully retract the body with attached pad from the surface (Figure 155).

ⓘ **Technique Tip:** Once the Persona 3-Peg OsseoTi Patella implant is fully pressed into place it cannot be removed and reinserted. If the OsseoTi Patella implant is fully inserted and it is determined that the fit is not acceptable, the component must be removed and a cemented Persona All-Poly Patella component shall then be implanted per Persona Personalized Knee Surgical Technique (3914), Appendix B.

ⓘ **Technique Tip:** To disassemble the pad from the clamp, place palm under foot of the clamp and wrap fingers around the tabs on the pad. Pull down with fingers to disassemble (Figure 156).

Persona Porous 3-Peg
 Patella Clamp
 42-5903-070-00



Persona Porous 3-Peg Patella
 Clamp Pads
 42-5903-075-35



Persona OsseoTi
 3-Peg Patella
 42-5405-000-35



Appendix A: Compatibility Charts

CR: Persona CR Femoral/Persona CR Bearing and Tibial Compatibility

| Tibial Size | TASP Top & Bottom Color | Femoral Size | | | | | | | | | | | |
|-------------|-------------------------|--------------|---|-----------|---|---|---|-----------|---|----------|----|----|----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| A | Orange | 1-2 / AB | | 3-6 / AB | | | | | | | | | |
| B | | | | | | | | | | | | | |
| C | Yellow | 1-2 / CD | | 3-9 / CD | | | | | | | | | |
| D | | | | | | | | | | | | | |
| E | Green | | | 3-11 / EF | | | | | | | | | |
| F | | | | | | | | | | | | | |
| G | Blue | | | | | | | 7-12 / GH | | | | | |
| H | | | | | | | | | | | | | |
| J | Gray | | | | | | | | | 9-12 / J | | | |

MC: Persona CR Femoral/Persona MC Bearing and Tibial Compatibility

| Tibial Size | TASP Top & Bottom Color | Femoral Size | | | | | | | | | | | |
|-------------|-------------------------|--------------|---|----------|----------|---|----------|---|-----------|---|----|----|---------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| A | Orange | 1-2 / AB | | 3-4 / AB | | | | | | | | | |
| B | | | | | | | | | | | | | |
| C | Yellow | | | | 4-5 / CD | | 6-7 / CD | | 8-9 / CD | | | | |
| D | | | | | | | | | | | | | |
| E | Green | | | | 4-5 / EF | | 6-7 / EF | | 8-11 / EF | | | | |
| F | | | | | | | | | | | | | |
| G | Blue | | | | | | | | 8-11 / GH | | | | 12 / GH |
| H | | | | | | | | | | | | | |
| J | Gray | | | | | | | | | | | | 12 / J |

UC: Persona CR Femoral/Persona UC Bearing and Tibial Compatibility

| Tibial Size | TASP Top & Bottom Color | Femoral Size | | | | | | | | | | | |
|-------------|-------------------------|--------------|---|----------|-----------|---|---|-----------|---|----------|----|----|----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| A | Orange | 1-2 / AB | | 3-4 / AB | | | | | | | | | |
| B | | | | | | | | | | | | | |
| C | Yellow | 1-2 / CD | | 3-7 / CD | | | | | | | | | |
| D | | | | | | | | | | | | | |
| E | Green | | | | 4-11 / EF | | | | | | | | |
| F | | | | | | | | | | | | | |
| G | Blue | | | | | | | 7-12 / GH | | | | | |
| H | | | | | | | | | | | | | |
| J | Gray | | | | | | | | | 9-12 / J | | | |

Appendix A: Compatibility Charts (cont.)

PS: Persona PS Femoral/Persona PS Bearing and Tibial Compatibility

| Tibial Size | TASP Top & Bottom Color | Femoral Size | | | | | | | | | | | |
|-------------|-------------------------|--------------|---|----------|---|---|----------|---|---|---|------------|----|----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| A | Orange | 1-2 / AB | | 3-5 / AB | | | | | | | | | |
| B | | | | | | | | | | | | | |
| C | Yellow | 1-2 / CD | | 3-5 / CD | | | 6-9 / CD | | | | | | |
| D | | | | | | | | | | | | | |
| E | Green | | | 3-5 / EF | | | 6-9 / EF | | | | 10-11 / EF | | |
| F | | | | | | | | | | | | | |
| G | Blue | | | | | | 6-9 / GH | | | | 10-12 / GH | | |
| H | | | | | | | | | | | | | |
| J | Gray | | | | | | | | | | 10-12 / J | | |

CPS: Persona PS Femoral/Persona Constrained Posterior Stabilized (CPS) Bearing and Tibial Compatibility

| Tibial Size | TASP Top & Bottom Color | Femoral Size | | | | | | | | | | | |
|-------------|-------------------------|--------------|---|----------|---|---|----------|---|---|---|------------|----|----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| A | Orange | 1-2 / AB | | 3-5 / AB | | | | | | | | | |
| B | | | | | | | | | | | | | |
| C | Yellow | 1-2 / CD | | 3-5 / CD | | | 6-9 / CD | | | | | | |
| D | | | | | | | | | | | | | |
| E | Green | | | 3-5 / EF | | | 6-9 / EF | | | | 10-11 / EF | | |
| F | | | | | | | | | | | | | |
| G | Blue | | | | | | 6-9 / GH | | | | 10-12 / GH | | |
| H | | | | | | | | | | | | | |
| J | Gray | | | | | | | | | | 10-12 / J | | |

The CPS bearings shall be used with cemented non-porous femoral and tibial components only.

Appendix A: Compatibility Charts (cont)

CR: CR Femoral components are compatible with Persona® OsseoTi Patella components as defined below:

| | | | Persona® CR Femoral Component Sizes | | | | | | | | | | | |
|---|------|-----------|-------------------------------------|---|---|---|---|---|---|---|---|----|----|----|
| | Size | Thickness | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Persona® OsseoTi Patellar Component (42-5405-000-XX) Size (mm) | 29 | 9.0 mm | | | | | | | | | | | | |
| | 32 | 9.0 mm | | | | | | | | | | | | |
| | 35 | 9.5 mm | | | | | | | | | | | | |
| | 38 | 10.0 mm | | | | | | | | | | | | |
| | 41 | 10.0 mm | | | | | | | | | | | | |

See package insert for complete details on compatibility

| | |
|--|--------------|
| | Compatible |
| | Incompatible |

Appendix B

In addition to the wide variety of component sizes, shapes, and constraint options offered by the Persona® System, Zimmer Biomet offers optional instrumentation and surgical approaches.

Additional implant options:

| | |
|---|----------------|
| Persona® The Personalized Knee® Surgical Technique | 3914 |
| <ul style="list-style-type: none"> • Persona® Primary Cemented Femur • Persona® Primary 5° Cemented Stemmed Tibia • Persona® Cemented All-Poly Patella | |
| Persona® Trabecular Metal™ Femoral Component Surgical Technique | 97-5026-070-00 |
| Persona® Trabecular Metal™ Tibia Surgical Technique | 97-5026-027-00 |
| Persona® Constrained Posterior Stabilized (CPS) Surgical Technique..... | 97-5026-072-00 |
| Trabecular Metal™ Primary Patella Surgical Technique..... | 97-7255-112-00 |

Additional instrumentation options:

| | |
|---|----------------|
| Fixed Distal Resection System Surgical Technique | 97-5026-017-00 |
| Adjustable Distal Resection System Surgical Technique | 97-5026-016-00 |
| Persona® The Personalized Knee® Surgical Technique | 3914 |
| <ul style="list-style-type: none"> • PRI Distal Resection Instrumentation • Femoral Shift Block • 2° Varus/Valgus Tibial Recut Guide • Spacer Block Instrumentation and Technique | |

Additional surgical approach options:

| | |
|---|----------------|
| Persona® Personalized Alignment™ Total Knee Arthroplasty Surgical Technique | 1578 |
| Zimmer FuZion™ Instruments Surgical Technique..... | 97-5026-040-00 |
| Persona® Primary Knee: Flexion-First Balancing Instrumentation Surgical Technique | 2750 |

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Authorized Representative

Biomet GSCC BV
Haseldonk 6530
4836 LD Breda
The Netherlands



Legal Manufacturer

Zimmer, Inc.
1800 West Center Street
Warsaw, Indiana 46580
USA

www.zimmerbiomet.com



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