



**PERSONA**

THE PERSONALIZED  
KNEE SYSTEM

Trabecular Metal™  
Femoral Component

Surgical Technique



## Introduction

The *Persona*® *Trabecular Metal*™ Femoral Component is designed to unite stable porous femoral component fixation with compatible cruciate-retaining, ultracongruent, and posterior stabilized articular surface implants. This Surgical Technique covers all femoral preparation, finishing, and implantation steps for the *Trabecular Metal* Femoral Component; please reference the appropriate *Persona* Knee Surgical Technique for all additional surgical steps including surgical approach, tibia/patella preparation and implantation, balancing, constraint options, and compatibility.

Successful porous femoral component arthroplasty is dependent three key components:

### 1. Bone Resection Accuracy

Precise, flat bone cuts are essential to maximize *Trabecular Metal* material contact with the resected bone and ensure appropriate press-fit to promote stable, long-term fixation.

### 2. Patient Bone Quality

The *Persona Trabecular Metal* Femoral component should only be used on patients with good bone quality to ensure in-growth will occur. Stable fixation may be compromised if used on soft, osteoporotic bone quality.

### 3. Ambulation Period

An uncemented total knee replacement requires a period of time to achieve stable bone growth into the *Trabecular Metal* material for successful, long-term fixation. As such, patient rehabilitation should be tailored for porous knee components.

To achieve the three key components vital for successful porous femoral component arthroplasty, some additional TM-specific technique tips are as follows.

- Saw Blades
  - Use new saw blades and consider changing the saw blade during the surgery if it becomes dull or ineffective.
- Distal Thickness
  - The *Trabecular Metal* Femoral Component is approximately 0.5mm thicker distally than the cemented component. Surgeons may elect to account for this thickness during the distal femoral resection or the proximal tibial resection.

- Cut Guide Stability
  - Two oblique pins are required for proper stability of the 4-in-1 Cut Guide. A well fixed and stable Cut Guide will help ensure precise bone cuts for proper femoral fit.
  - Follow the order of femoral cuts as described in the technique. Strict adherence to the cut order will help ensure the Cut Guide is stable for all four cuts.
- Femoral Trial/Implant Insertion
  - Apply upward force on the inserter while impacting the femoral provisional and/or implant. This will assist in achieving the proper orientation of the femoral component on the bone.
  - Due to the press-fit nature of a porous component, more force may be required to insert a porous femoral component than a cemented component.
- Femoral Trial/Implant Fit
  - A fully seated femoral provisional and/or implant should have no gaps anteriorly, posteriorly, and distally. Gaps in the anterior and posterior chamfer areas are to be expected and can be filled with bone grafting, if desired.
  - The *Trabecular Metal* material is approximately 0.5mm proud of the implant rails and has a darkened appearance. If no light appears between the distal bone face and the femoral implant, the implant is properly seated.
  - Bone cement is recommended in cases in which the implant fit has been compromised in any way. A compromised fit could be encountered due to femoral re-cuts, component extraction and re-insertion, or unplanned voids in the bone. *Trabecular Metal* Femoral Components are indicated for use with bone cement if desired.

The complete technique contains further details and instructions, wherein TM-specific tips are denoted with the following symbol:



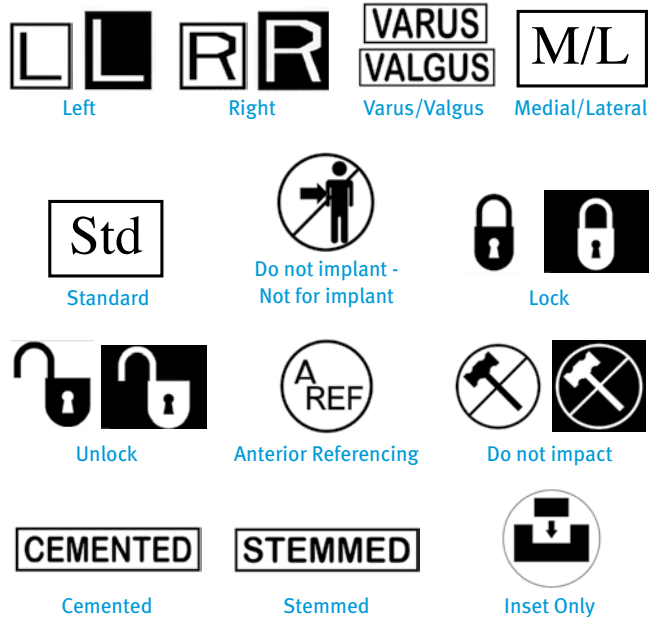
## Magnet Usage

**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
- Lock
- Unlock
- Anterior Referencing
- Do not impact
- Cemented
- Stemmed
- Inset Only



## Screw/Pin Information

The chart below contains relevant information on various 3.2mm Pins/Screws 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?
	25mm x 2.5mm Female Hex Screw 42-5099-025-25*	 2.5mm Male Hex Driver 42-5099-025-00	Sterile	2	Yes
	75mm x 3.2mm Trocar Tipped Drill Pin (2.5mm hex) 00-5901-020-00	 Pin/Screw Inserters 00-5901-021-00	Sterile	4	Yes
	Hex Headed Screw 33mm long 00-5901-035-33		Sterile	2	Yes
	MIS Quad-Sparing Total Knee Headed Screw 48mm long 00-5983-040-48	 Screw Inserters/Extractors 00-5983-049-00	Sterile	1	Yes
	25mm Shorthead Holding Pin 00-5977-056-03	 Multi Pin Puller 00-5901-022-00	Non-Sterile	1	No

\*Note: The 2.5mm Female Hex Screws and 2.5mm Male Hex Driver should not be used in cortical bone, as this may increase the incidence of stripping of the driver.

**Persona  
Trabecular Metal  
Femoral Component  
Surgical Technique**

**Table of Contents**

<b>Establish Femoral Alignment</b>	<b>1</b>
<b>Resect Distal Femur</b>	<b>3</b>
<b>Size Femur and Establish External Rotation</b>	<b>5</b>
<b>Complete Femoral A/P and Chamfer Resections</b>	<b>7</b>
<b>CR Femoral Finishing</b>	<b>9</b>
<b>PS Femoral Finishing and PS Box Preparation</b>	<b>11</b>
<b>Implant Femoral Component</b>	<b>14</b>

## Establish Femoral Alignment

Please refer to the appropriate surgical technique if other distal femoral alignment and distal femoral resection instrumentation is to be used to accomplish the distal femoral resection.

- After attaining the desired soft tissue exposure, use the 8mm IM Step Drill to make a starter hole (Fig. 1).
- Suction the canal to remove medullary contents.



Fig. 1

- Insert the Femoral IM Rod into the Modular T-Handle (Fig. 2) and insert the IM rod into the femur far enough to ensure the most accurate replication of the anatomic axis, then remove the T-handle (Fig. 3).

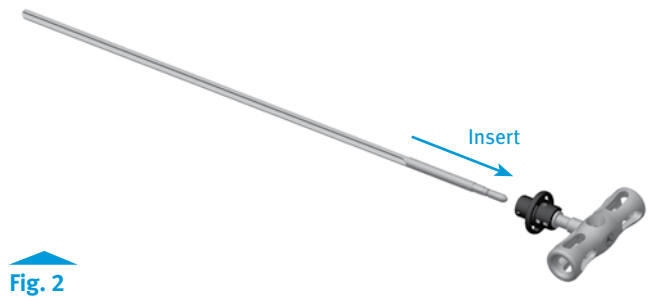


Fig. 2

### TECHNIQUE TIP

1.A

As the symbol on the T-handle indicates – do not impact the T-Handle.

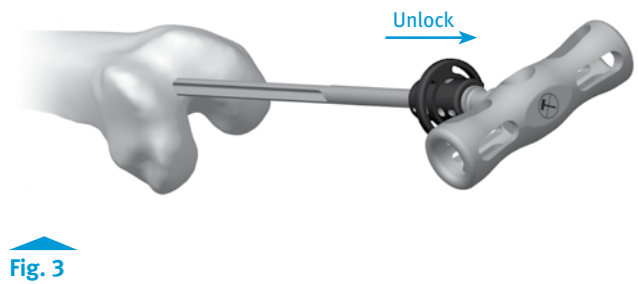


Fig. 3

### Instruments



Femoral IM Rod  
00-5901-060-00



Modular  
T-Handle  
00-5901-061-00



8mm IM Step Drill  
00-5978-014-00

- Retract the spring-loaded button on the top of the Femoral Valgus Alignment Guide and rotate the valgus adjustment dial to the desired valgus angle and release the button to lock the valgus angle from 0° to 9°, ensuring that the proper left or right setting is attained (Fig. 4).

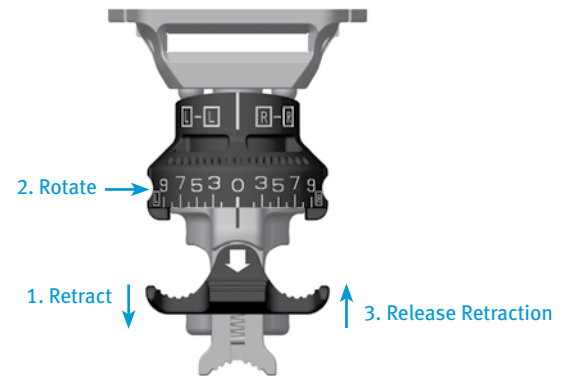


Fig. 4

- Place the Femoral Valgus Alignment Guide on the IM Rod against the most prominent condyle and confirm the desired valgus setting (Fig. 5).

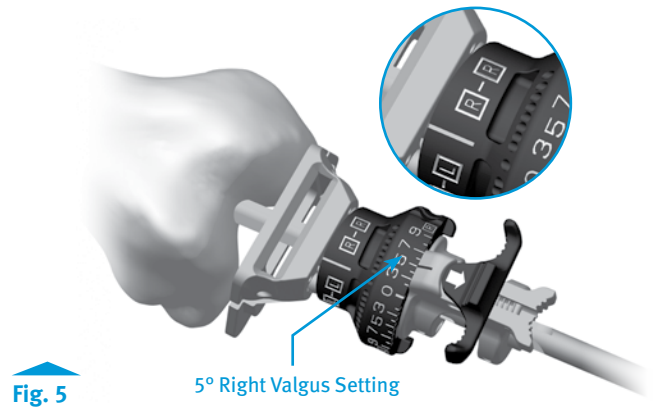


Fig. 5

**TECHNIQUE TIP**

**1.B**

*If the epicondyles are visible, the epicondylar axis may be used as a guide in setting the orientation of the Femoral Valgus Alignment Guide. This does not set the rotation of the femoral component, but keeps the distal cut oriented to the final component rotation. If desired, the guide can be pinned to provide rotational stability (Fig. 6).*

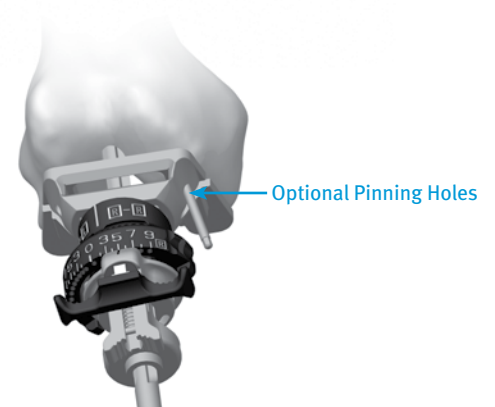


Fig. 6



Femoral Valgus Alignment Guide  
00-5901-067-00



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



Pin/Screw Inserter  
00-5901-021-00



## Resect Distal Femur

- Attach the 0° Captured Cutting Head to the Distal Femoral Resection Guide (Fig. 7). The adjustment dial on the resection guide can be set from “-2” to “+4”. The “0” represents a 10mm distal resection (Fig. 8). The -1 setting represents a 9mm resection while the +4 setting represents a 14mm resection. Upon rotation, the dial has palpable stops and clear markings at each 2mm location. One half rotation creates 1mm of adjustment. Insert the resection guide with the cutting head into the alignment guide until the cutting head rests on the anterior femoral cortex. Verify the desired resection setting on the resection guide and/or rotate the adjustment dial to attain the desired setting (Fig. 9). Insert trocar-tipped pins through the two standard pin holes marked “0” on the anterior surface of the cutting head (Fig. 10). Additional 2mm adjustments may be made by removing the cutting head from the pins and replacing the cutting head on the pins in the sets of holes marked -2, +2, and +4. The markings on the cutting head indicate, in millimeters, the amount of bone resection each will yield relative to the initial distal resection setting.

### TECHNIQUE TIP

**2.A**

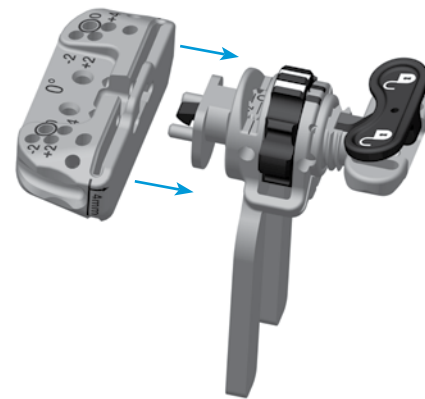
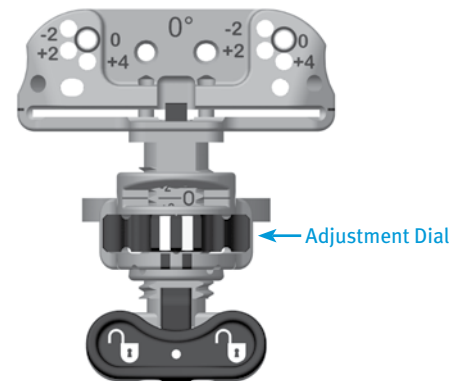
If more fixation is desired, insert trocar-tipped pins in the small oblique holes on the cutting head.

- If pin(s) were used to maintain rotational alignment of the alignment guide, use the Multi Pin Puller to remove the pin(s). Alternatively, the Pin/Screw Inserter can be used to remove these pin(s).

### TECHNIQUE TIP

**2.B**


The Trabecular Metal Femoral Component is approximately 0.5mm thicker distally than the Persona Cemented Femoral Component. If desired, additional thickness may be accounted for in the distal femoral resection or the proximal tibia resection.


**Fig. 7**

**Fig. 8**

**Fig. 9**

### Instruments





- Squeeze the button on the resection guide (Fig. 11) to release and remove the alignment guide and resection guide assembly from the cutting head. The modular T-handle is used to remove the IM Rod, prior to the distal femoral resection.
- Alternatively, the T-handle can be used to remove the IM Rod while the button on the resection guide is squeezed to facilitate rapid removal of the IM rod, the alignment guide and the resection guide at the same time. If necessary, the round end of the Slaphammer Extractor can be used in conjunction with the central hole in the T-Handle to remove the IM rod.
- Cut the distal femur through the cutting slot in the cutting head, using a 1.27mm (0.050 in.) oscillating saw blade (Fig. 12). If the optional uncaptured technique is used, the distal femur should be cut on the outside surface of the capture.

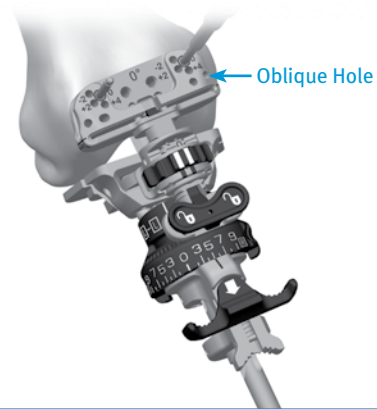
**TM** **Note: The flatness of the distal femoral resection is critical to ensuring adequate contact between the Persona Trabecular Metal femoral implant and the bone. Evaluate the flatness of the distal femur resection prior to sizing.**

**TECHNIQUE TIP**

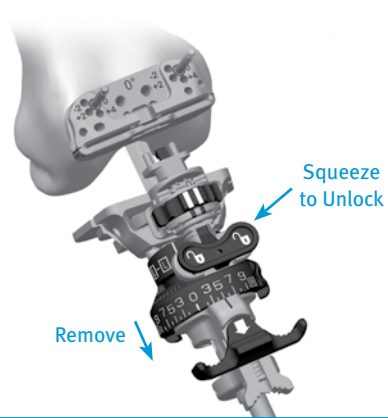
**2.C** **TM**

- It is recommended to use new saw blades for femoral resections.
- Areas where the bone transitions from high to low density, such as from cortical to cancellous bone, may cause the saw blade to skive and result in an inconsistent cut. Use caution when resecting in these regions and operate the saw at high speed but advance the saw slowly to ensure a consistent cut.
- The flatness of the distal femoral resection is critical to ensuring sufficient contact between the Persona Trabecular Metal femoral implant and the bone. Evaluate the flatness of the distal femur resection with a flat surface, such as the distal resection cutting guide, especially around the intercondylar notch, prior to sizing. Modify the distal femoral surface, if necessary, to ensure subsequent guides and the implant fit properly.

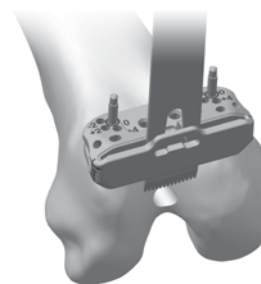
- After completing the cut, remove pins and the cutting head.



**Fig. 10**



**Fig. 11**



**Fig. 12**



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



Pin/Screw  
Inserter  
00-5901-021-00



Multi Pin Puller  
00-5901-022-00



Persona  
Slaphammer  
42-5099-037-00

## Size Femur and Establish External Rotation

- Rotate the feet of the Anterior Referencing Sizer so the appropriate “Left” or “Right” markings are visible as the Anterior Referencing Sizer is placed on the bone (Fig. 13). External rotation can be set at 3° or 5° from the posterior condylar axis.

### TECHNIQUE TIP

**3.A**

Remove any osteophytes that interfere with instrument positioning.

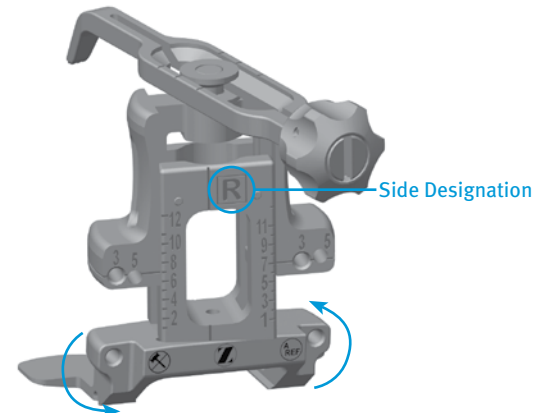
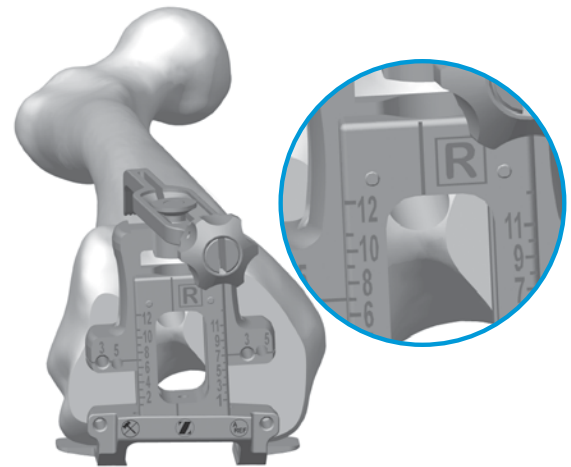
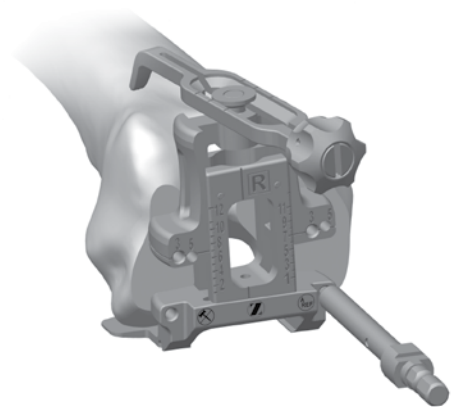
- Apply the Anterior Referencing Sizer so that the flat surface of the Anterior Referencing Sizer is flush against the resected surface of the distal femur and the feet of the Anterior Referencing Sizer are flush against the posterior condyles. Center the Anterior Referencing Sizer mediolaterally. Both the vertical and horizontal portions of the Anterior Referencing Sizer provide visual cues relative to the AP and epicondylar axes of the femur to help ensure that desired external rotation is attained. If the 3° external rotation holes are to be used to set external rotation, the etched line on the Anterior Referencing Sizer should be positioned so it is in line with Whiteside’s line (Fig. 14) to optimize the M/L position of the drill holes for subsequent Anterior Referencing 4-in-1 Cut Guide placement. If the 5° external rotation holes are to be used, the sizer can be positioned with the etched line on the Anterior Referencing Sizer 4mm laterally from Whiteside’s line to better center the drill holes for subsequent Anterior Referencing 4-in-1 Cut Guide placement, due to the M/L offset of the holes. Hold the Anterior Referencing Sizer in place and if necessary, secure the Anterior Referencing Sizer to the femur using 25mm x 3.2mm (2.5mm female hex) screws (Fig. 15) in one or both of the holes on the lower portion of the Anterior Referencing Sizer to help draw the Anterior Referencing Sizer adjacent to the distal femur, particularly in MIS situations.

**Note: Do not use 48mm screws for fixation of the Anterior Referencing Sizer. 48mm screws are not recommended due to potential bone perforation.**

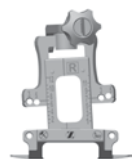
### TECHNIQUE TIP

**3.B**

Do not impact the Anterior Referencing Sizer onto the femur.


**Fig. 13**

**Fig. 14**

**Fig. 15**

### Instruments



Persona Anterior  
Referencing Sizer  
42-5099-088-10



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



25mm x 3.2mm  
(2.5mm female hex)  
42-5099-025-25

- 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° of flexion (70°-80°). This will decrease the tension of the patellar tendon to facilitate placement of the Anterior Referencing Sizer Boom. The Anterior Referencing Sizer 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 (Fig. 16a). Once the Anterior Referencing Sizer Boom is appropriately positioned, it should be locked in place by tightening the knob at the end of the boom clockwise (Fig. 16b).

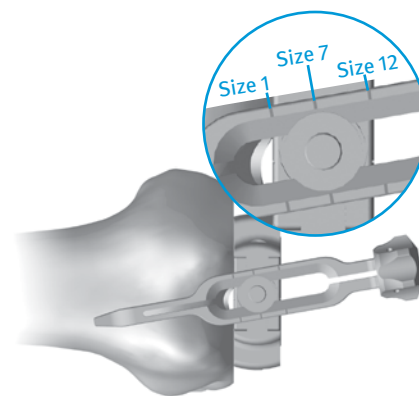


Fig. 16a

**TECHNIQUE TIP**

**3.C**

- Lock boom after positioning to reduce the toggle of the boom tip. This will also reduce the risk of notching.
- 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.
- 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.



Fig. 16b

- After the Anterior Referencing sizer is appropriately positioned on the femur, read the femoral size from the engraved lines on the sizer tower and select the closest size (Fig. 17). 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° or 5° holes in the midline of the A/P portion of the sizer are used to drill 3.2mm holes for pegs on the Anterior Referencing 4-in-1 Femoral Cut Guide (Fig 18). A 3.2mm 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.

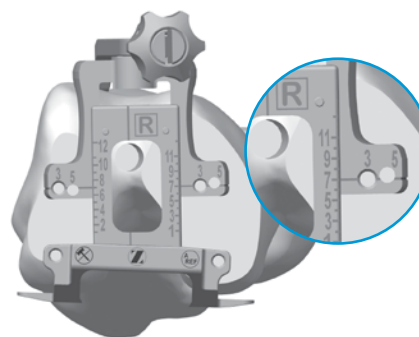


Fig. 17

**TECHNIQUE TIP**

**3.D**

- The Multi Pin Puller cannot be used to extract the screw(s).
- This Anterior Referencing Sizer works only with these Anterior Referencing 4-in-1 Femoral Cut Guides and Provisionals, and implants referenced in this technique.

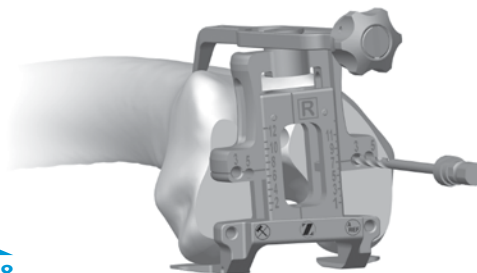


Fig. 18

**Instruments**



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



3.2mm Drill  
00-5120-085-00

## Complete Femoral A/P and Chamfer Resections

- By hand, place the 4-in-1 Cut Guide on the femur by aligning the 2 pins on the back of the guide with the previously drilled positioning holes (Fig. 19). Impact the face of the guide until the guide is flush with the femur.

### TECHNIQUE TIP

4.A **TM**

*The flatness of the bone and stability of the 4-in-1 Cut Guide on the femur is critical to ensuring sufficient contact between the implant and the bone.*

- Place the Resection Guide through the anterior slot of the cut guide to ensure the desired anterior resection (Fig. 20).

- If inadequate bone will be removed from the anterior cortex, drill through the two holes on the face of the cut guide (Fig. 21a). Use the Slaphammer to axially remove the cut guide (Fig. 22a & 22b). Place the next smaller-sized femoral cut guide on the femur in the newly drilled “posteriorized” drill holes (Fig. 21a & 21b). Verify the anterior and posterior resection levels with the resection guide to assure that the desired resections will be attained. If usage of the smaller-sized femoral cut guide will result in too much posterior bone removal the original larger-sized femoral cut guide can be used to make a more conservative posterior resection.

### TECHNIQUE TIP

4.B

*If the 2mm 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.*



Fig. 19



Fig. 20

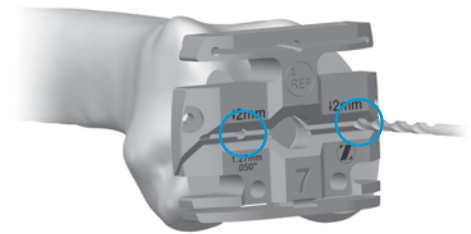


Fig. 21a

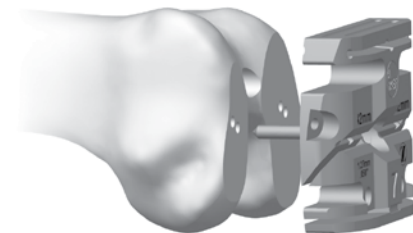


Fig. 21b

### Instruments



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



Resection Guide  
00-5977-084-00



3.2mm Drill  
00-5120-085-00

**TECHNIQUE TIP**

**4.C**

If there is a risk of anterior notching, the 4-in-1 cut guide can be removed, rotated 180° and be replaced on the distal femur. Holes can then be drilled through the 2mm shift holes on the face of the 4-in-1 guide. The 4-in-1 guide then needs to be removed, rotated 180° and be placed on the distal femur in the anteriorized holes. This will result in a 2mm anterior shift of the 4-in-1 femoral resections. Verify that the desired anterior and posterior resections will be attained.

- After final placement of the desired Cut Guide, insert 3.2mm trocar-tipped pins or 3.2mm Headed Screws (see Screw Information section for examples) through the oblique holes in the Cut Guide (Fig. 23). Use a 1.27mm (.050 in.) thick oscillating saw blade to complete the anterior and posterior resections followed by the posterior chamfer and anterior chamfer resections through the cut slots. (Fig. 24) Upon completion of the cuts, use the Multi Pin Puller or Pin/Screw Inserter to remove the oblique pins/screws. Use the *Persona* Slaphammer to remove the cut guide from the femur (Fig. 22a & 22b).

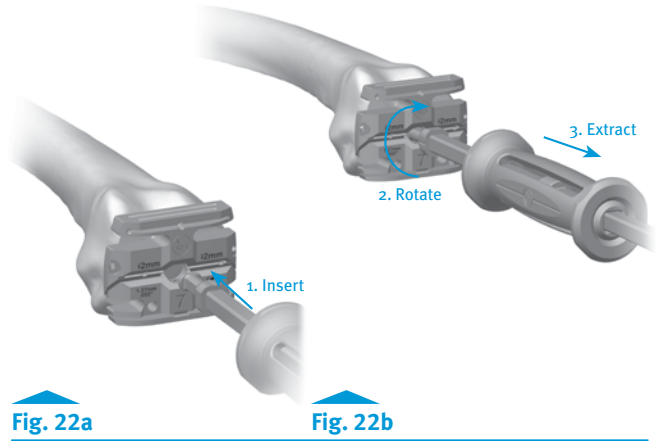


Fig. 22a

Fig. 22b

**TECHNIQUE TIP**

**4.D**

It is not recommended that the following Headed Screws are used through the oblique holes of the 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.

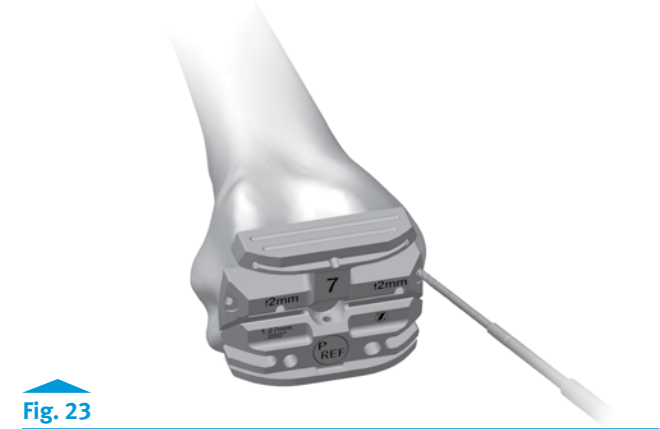


Fig. 23

**TECHNIQUE TIP**

**4.E**



- Areas where the bone transitions from high to low density, such as from cancellous to cortical bone, can lead to the saw blade skiving and inconsistent cuts. Use caution when resection in these regions. Advancing an oscillating saw blade slowly through the bone while using high frequency oscillations will help to ensure a flat, consistent resection.
- Check the flatness of all bone resections to ensure sufficient contact will result between the implant and the bone. If necessary, modify the cut surfaces to be completely flat.

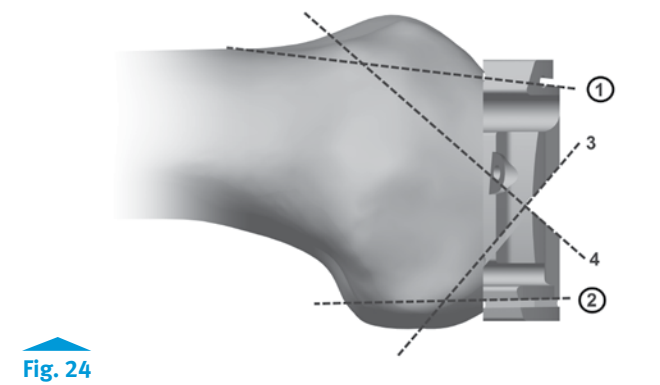


Fig. 24



Pin/Screw Inserter  
00-5901-021-00



Multi Pin Puller  
00-5901-022-00



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



## CR Femoral Finishing

## TECHNIQUE TIP

## 5.A

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 (Fig. 25a). 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.

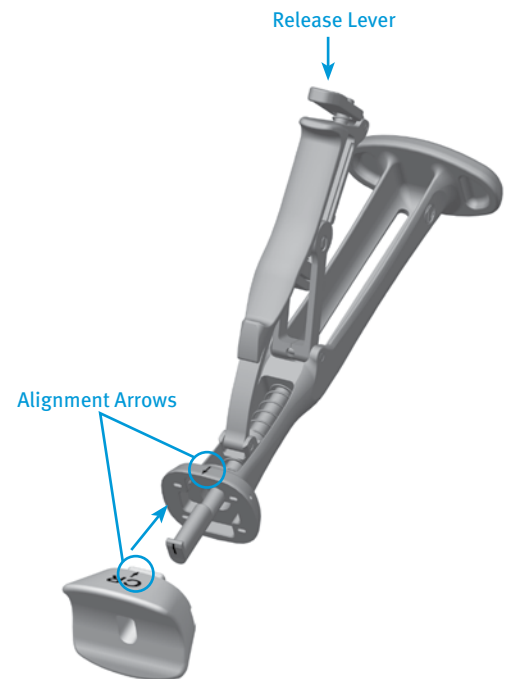


Fig. 25a

- Femoral sizes are provided in two profiles, Standard and Narrow. The 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 (Fig. 25b). 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.

Note: Narrow phantom lines are for illustration clarity only.

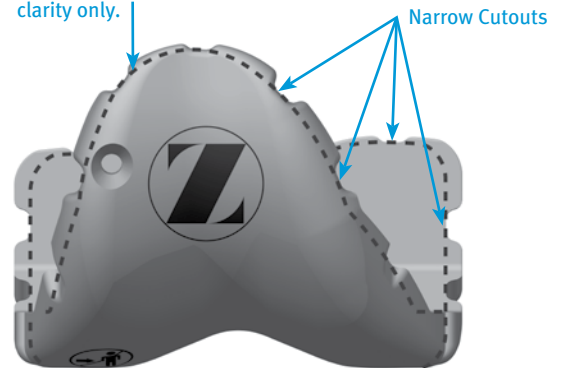


Fig. 25b

## TECHNIQUE TIP

## 5.B

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.

## Instruments



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



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



Persona CR Femoral  
Provisional  
Size 7 Right  
42-5027-062-02

- 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 tab 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 (Fig. 26). Place the correct CR Femoral Provisional onto the femur in the desired medial/lateral position. Impact the end of the Femoral Inserter/Extractor handle and apply an upward force to fully seat the CR Femoral Provisional onto the femur in the proper orientation. (Fig. 27). To remove the Femoral Inserter/Extractor from the CR Femoral Provisional, pinch the release lever on the proximal portion of the Femoral Inserter/Extractor (Fig. 27). Alternatively, if the CR Femoral Provisional is placed on the femur by hand, the CR femoral Impaction Pad/insertor assembly can be used to impact the provisional onto the femur. If this insertion/impaction method is used, the inserter handle must be in the closed and locked position. For additional fixation of the fully seated provisional, insert the 25mm x 3.2mm screw (2.5mm female hex) with the 2.5mm Male Hex Driver through the hole in the lateral anterior flange of the CR Femoral Provisional (Fig. 28).

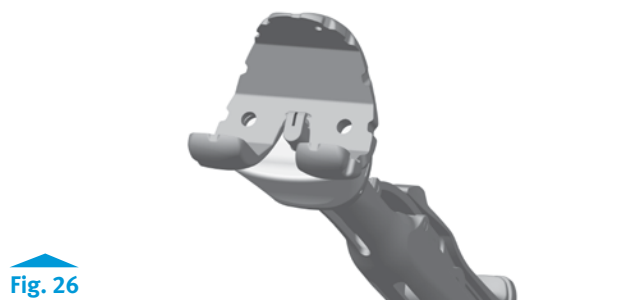


Fig. 26

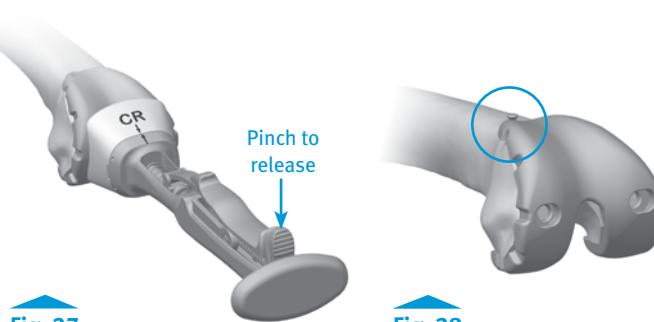


Fig. 27

Fig. 28

**Note: Do NOT use a 48mm screw in the anterior lateral fixation hole. 48mm screws are not recommended due to potential bone perforation.**

- Once 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 the femoral implant through the CR Femoral Provisional with the NexGen® 6.4mm Patella/Femoral Drill (Fig. 29). 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 the CR Femoral Provisional from the bone using the medial hole on the CR Femoral Provisional (Fig. 30). Alternatively, the Femoral Inserter/Extractor can be re-attached 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.



Fig. 29

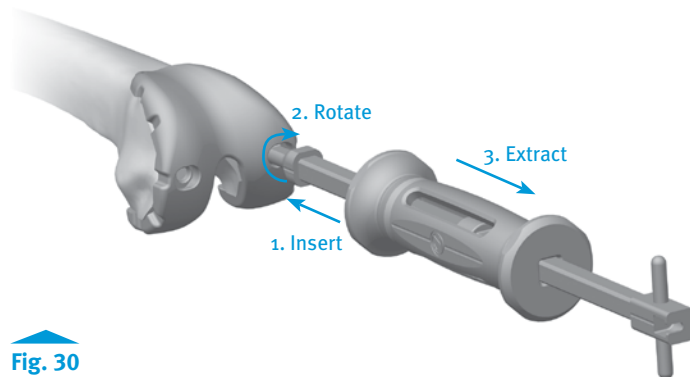


Fig. 30

**TECHNIQUE TIP**

**5.C**

*Do not impact the anterior flange of the CR Femoral Provisional for removal, as this may damage the CR Femoral Provisional.*

**Instruments**



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



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



Persona CR Femoral Provisional Size 7 Right  
42-5027-062-02



25mm x 3.2mm (2.5mm female hex)  
42-5099-025-25



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



Persona Slaphammer  
42-5099-037-00



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



## PS Femoral Finishing and PS Box Preparation

### TECHNIQUE TIP

### 6.A

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 (Fig. 31a). 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.

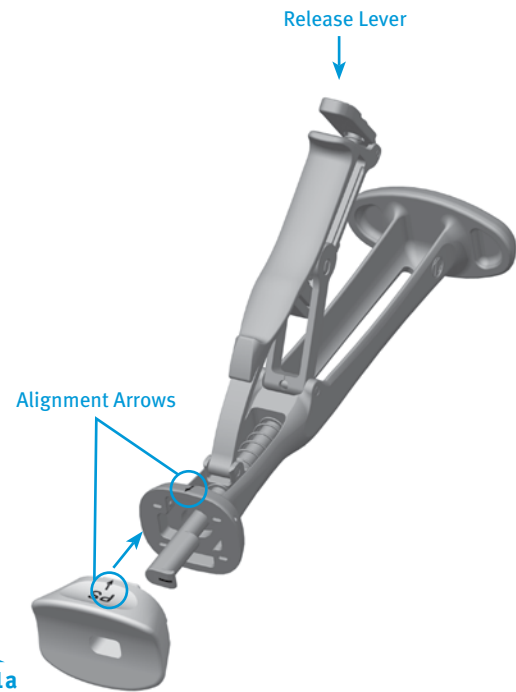


Fig. 31a

- Femoral sizes are provided in two profiles, Standard and Narrow. The 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 (Fig. 31b). 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.

Note: Narrow phantom lines are for illustration clarity only.

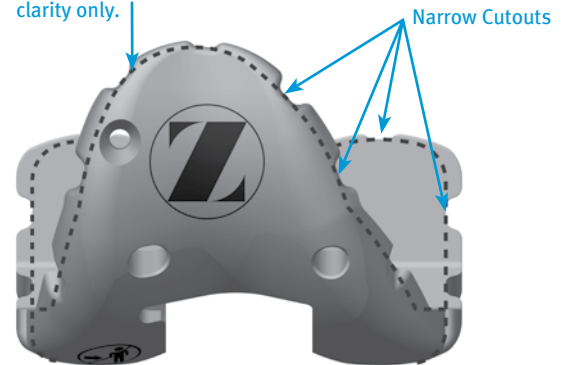
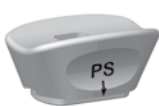


Fig. 31b

### Instruments



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



Persona Femoral  
PS Impactor Pad  
42-5099-093-00



Persona PS  
Femoral Provisional  
Size 7 Right  
42-5007-062-02

**TECHNIQUE TIP**

**6.B**

*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 tab 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 (Fig. 32). Place the correct PS Femoral Provisional onto the femur in the desired medial/lateral position. Impact the end of the Femoral Inserter/Extractor handle and apply an upward force to fully seat the PS Femoral Provisional onto the femur in the proper orientation. (Fig. 33). To remove the Femoral Inserter/Extractor from the PS Femoral Provisional, pinch the release lever on the proximal portion of the Femoral Inserter/Extractor (Fig. 33). Alternatively, if the PS Femoral Provisional is placed on the femur by hand, the PS Femoral Impaction Pad/insertor assembly can be used to impact the provisional into the femur. If this insertion/impaction method is used, the inserter handle must be in the closed and locked position. For additional fixation of the fully seated PS Femoral Provisional, insert the 25mm x 3.2mm screw (2.5mm female hex) with the 2.5mm Male Hex Driver through the hole in the lateral anterior flange of the PS Femoral Provisional (Fig. 34a).

**Note: Do NOT use a 48mm screw in the anterior lateral fixation hole of the PS Femoral provisional. 48mm screws are not recommended due to potential bone perforation.**

- By hand, insert and hold the correct-sized PS Box Cut Guide into the anterior holes of the PS Femoral Provisional (Fig. 34b). For additional fixation of the fully seated PS Box Cut Guide, insert the 25mm x 3.2mm screw (2.5mm female hex) with the 2.5mm 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 3-5, 6-9, and 10-12.

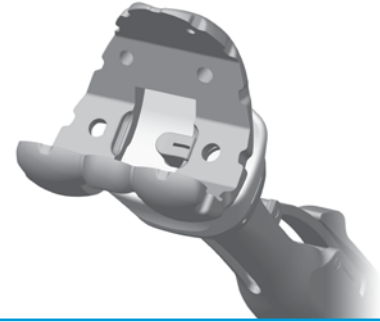


Fig. 32

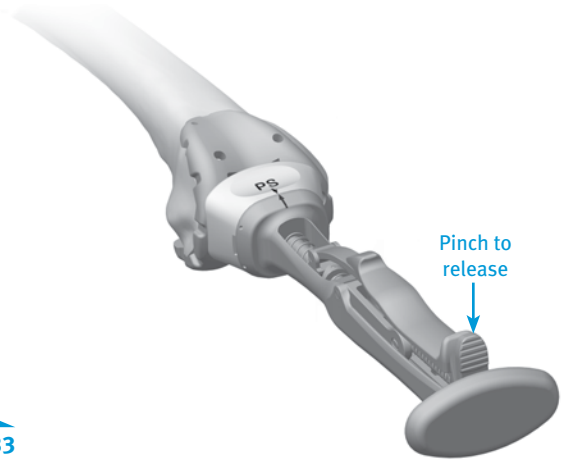


Fig. 33



Fig. 34a

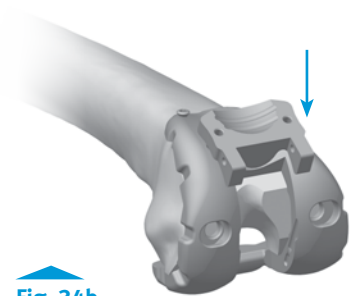


Fig. 34b

**TECHNIQUE TIP**

**6.C**

*Do not impact the PS Box Cut Guide into the provisional.*

**Instruments**



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



Persona Femoral PS Impactor Pad  
42-5099-093-00



Persona PS Femoral Provisional  
Size 7 Right  
42-5007-062-02



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



Persona PS Box Provisional  
6-9 Right  
42-5007-060-12

- Make the anterior to posterior PS box cut with a 1.27mm (.050 in.) thick, 1/2" 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. Control the saw to avoid over resection of the medial and lateral condyle in the proximal area of the PS box (Fig. 35a). 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 (Fig. 35b). 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 3-5, 6-9, and 10-12 PS Femoral Provisionals (Fig. 36).

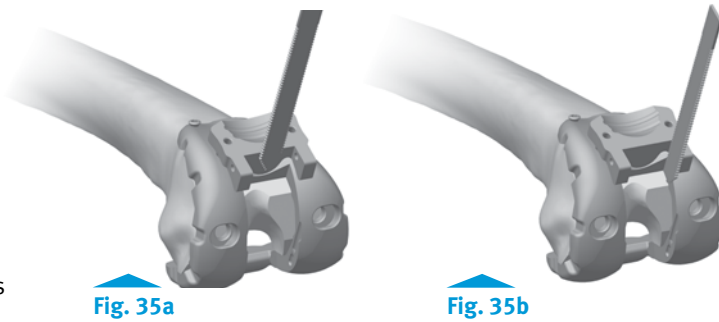


Fig. 35a

Fig. 35b

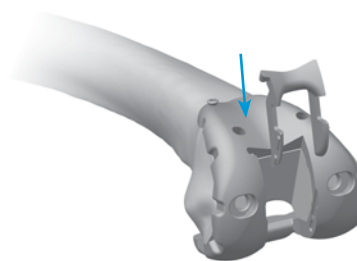


Fig. 36

## TECHNIQUE TIP

6.D

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.

- Drill the peg holes for the femoral implant through the PS Femoral Provisional with the NexGen 6.4mm Patella/Femoral Drill (Fig 37). Remove the screw from the anterior flange in the PS Femoral Provisional. Remove the PS Box Provisional. The Slaphammer can be used to remove the PS Femoral Provisional from the bone using the medial hole on the PS Femoral Provisional (Fig 38). 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.

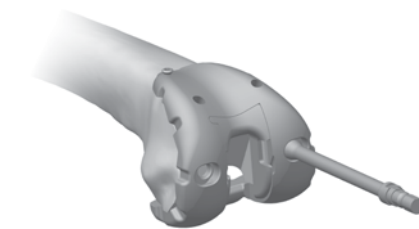


Fig. 37

## TECHNIQUE TIP

6.E

Do not impact the anterior flange of the PS Femoral Provisional for removal, as this may damage the PS Femoral Provisional.

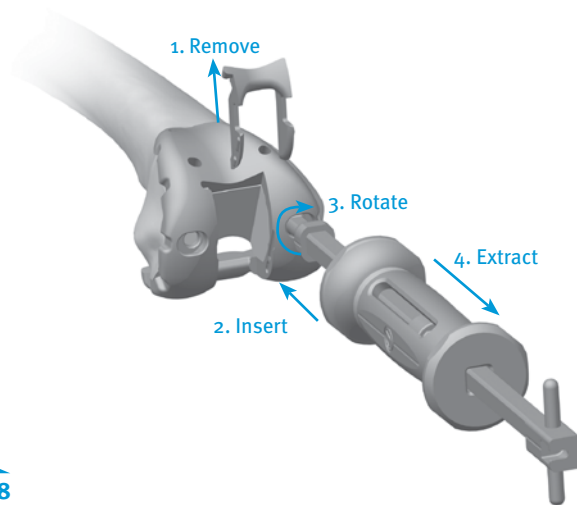


Fig. 38

## Instruments



25mm x 3.2mm  
(2.5mm female hex)  
42-5099-025-25

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

Persona  
Slaphammer  
42-5099-037-00

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

## Implant Femoral Components

After the implants have been chosen, make a final check to ensure that the size chosen for the femoral, tibial, and articular surface are compatible.

### Cementless Implantation Option

- With the knee in 70°-90° of flexion, retract the soft tissue in the desired manner. Attach the Femoral Inserter/Extractor to the femoral component (Fig. 39a & 39b). 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 inserter/extractor is removed, the impaction head/inserter assembly can be used to impact the component onto the femur. If this insertion/impaction method is used, the inserter 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 (Fig. 40). Use the Femoral Impactor Head assembly to fully seat the femoral component (Fig. 41). Remove retractors, and check the medial and lateral sides to make sure the femoral component is fully impacted distally.

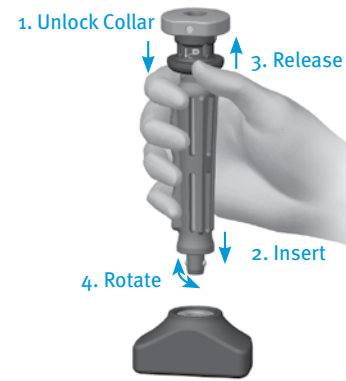


Fig. 40

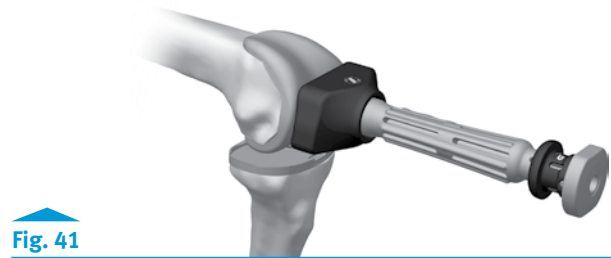


Fig. 41

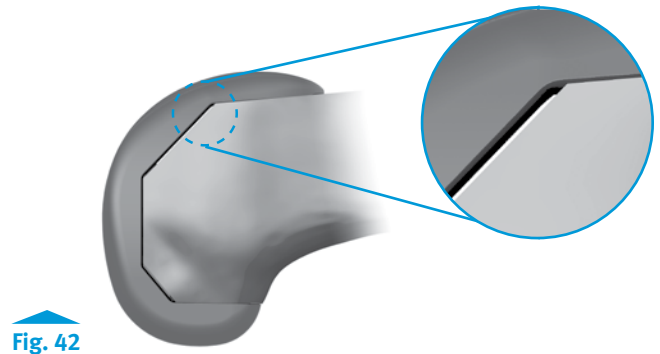


Fig. 42

### TECHNIQUE TIP

7.A **TM**

- Apply upward force on the Femoral Inserter/Extractor while impacting the femoral implant to ensure component is placed in proper orientation.
- 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 seating properly.
- The Trabecular Metal material extends above the femoral implant rail by approximately 0.5mm and has a dark color, which may appear not fully seated. If no light is visible beneath the distal surface and the bone, the implant is fully seated. Small gaps between the Trabecular Metal surface and the chamfer bone cuts may be visible and are acceptable (Fig. 42).
- Do not intra-operatively re-insert a previously extracted Persona Trabecular Metal femoral implant.

### Instruments



Femoral Impactor Head  
00-5901-032-00



Quick Connect Handle  
00-5901-034-00



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



Persona Femoral PS Impactor Pad  
42-5099-093-00



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



Persona Trabecular Metal CR Femoral Component Size 7 Right  
42-5028-062-02



Persona Trabecular Metal PS Femoral Component Size 7 Right  
42-5008-062-02

## Cemented Implantation Option

## TECHNIQUE TIP

## 7.B

Prior to cementing 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 the *Persona Trabecular Metal Femoral Component*. After the implants have been chosen, make a final check to ensure that all components are compatible. If the resected surfaces of the femur is sclerotic, drill multiple holes with a small drill (2.0mm-3.2mm) to improve cement intrusion. The cement should have a doughy consistency when ready for use.
- With the knee in 70°-90° of flexion, retract the soft tissue in the desired manner. Place a layer of cement on the underside of the prosthesis and in the holes drilled in the femur. Attach the Femoral Inserter/Extractor to the femoral component (**Fig. 43a & 43b**). 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 inserter/extractor is removed, the impaction head/inserter assembly can be used to implant the component onto the femur. If this inserter/extractor method is used, the inserter 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 (**Fig. 44**). Use this assembly to fully seat the femoral implant (**Fig. 45**). Remove retractors, and check the medial and lateral sides to make sure the femoral implant is fully impacted distally. Remove any excess cement in a thorough and consistent manner.

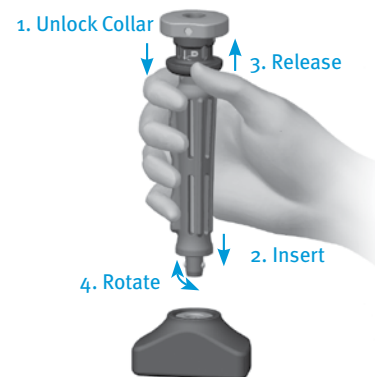
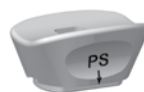


Fig. 44



Fig. 45

## Instruments

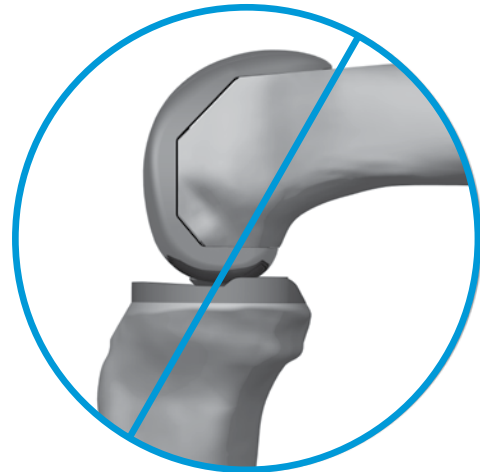
Femoral Impactor  
Head  
00-5901-032-00Tibial Impactor  
Head  
00-5901-033-00Quick Connect  
Handle  
00-5901-034-00Persona Femoral  
Inserter/Extractor  
42-5099-092-00Persona Femoral  
PS Impactor Pad  
42-5099-093-00Persona Femoral  
CR Impactor Pad  
42-5099-094-00Persona  
Trabecular Metal  
CR Femoral Component  
Size 7 Right  
42-5028-062-02Persona  
Trabecular Metal  
PS Femoral Component  
Size 7 Right  
42-5008-062-02

### Implant the Tibial Component and Articular Surface

- Refer to the "Implant Components" section of the *Persona* Knee Surgical Technique for tibial and articular surface insertion instructions.
- If the tibial component is already in place prior to femoral component insertion, take care to ensure the posterior condyles do not contact the tibial component upon impaction (**Fig. 46a & 46b**).



**Fig. 46a**



**Fig. 46b**







**Disclaimer**

This documentation is intended exclusively for physicians and is not intended for laypersons. Information on the products and procedures contained in this document is of a general nature and does not represent and does not constitute medical advice or recommendations. Because this information does not purport to constitute any diagnostic or therapeutic statement with regard to any individual medical case, each patient must be examined and advised individually, and this document does not replace the need for such examination and/or advice in whole or in part. Please refer to the package inserts for important product information, including, but not limited to, contraindications, warnings, precautions, and adverse effects.

Contact your Zimmer representative or visit us at [www.zimmer.com](http://www.zimmer.com)

