

Persona[®] Partial Knee System with Patient Specific Instrumentation (PSI)

Surgical Technique

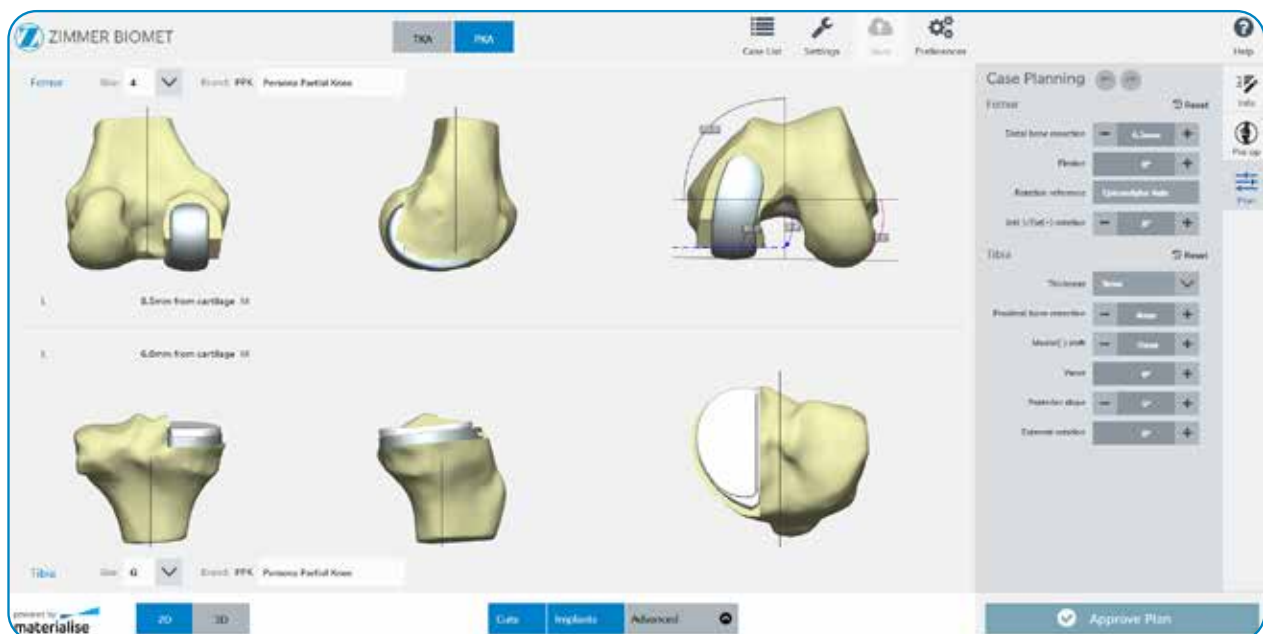


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Introduction

Partial knee arthroplasty (PKA) has been shown to be an effective treatment for isolated osteoarthritis. This surgical technique is a step-by-step procedure written for medial compartment PKA using Patient Specific Instrumentation (PSI). It is strongly recommended that the surgeon read the complete procedure for details, notes, and technique tips prior to the first case.

Exposure

Perform a standard medial parapatellar, midvastus or subvastus incision (see Persona Partial Knee Surgical Technique for reference). Remove at least the anterior half of the medial meniscus and expose the anterior portion of the medial plateau. Any remaining meniscus will be removed after the tibia bone resection.

Do not remove any osteophytes from the femur or tibia. Remove any soft tissue that may prevent proper placement of the femoral or tibia guide.



Proximal Tibial Resection

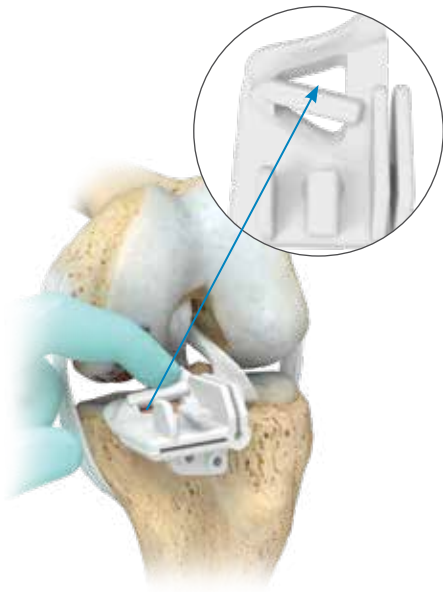


Figure 1

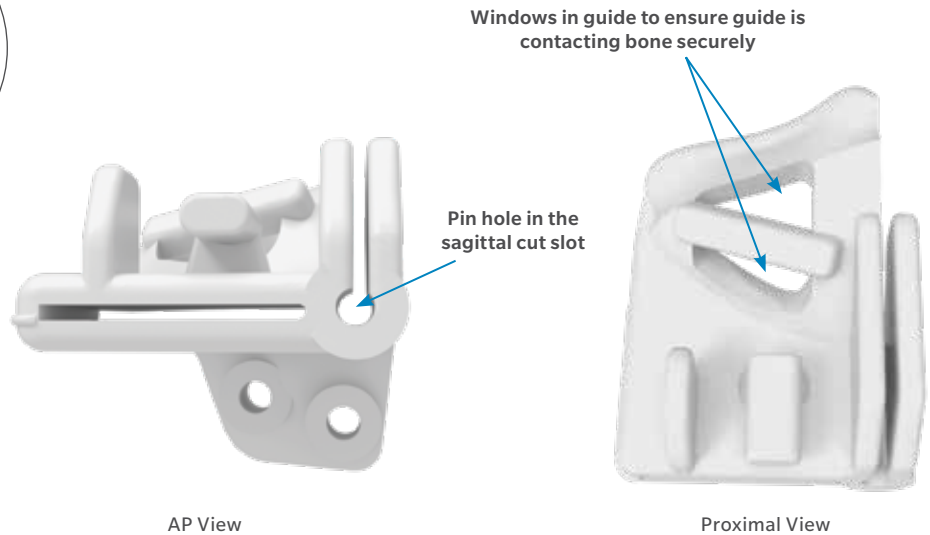


Figure 2

Position the tibia cut guide on the medial tibia plateau while holding the guide using downward pressure (Figure 1).

☰ **Technique Tip:** Dry the tibial plateau before positioning the tibia cut guide.

☰ **Technique Tip:** Externally rotating the tibia will expose more of the proximal surface and reduce any interference with the femur.

Verify a unique and stable fit of the cut guide on the tibia. Verify contact with bone through the windows and around the contact surface of the guide (Figure 2).

Proximal Tibial Resection

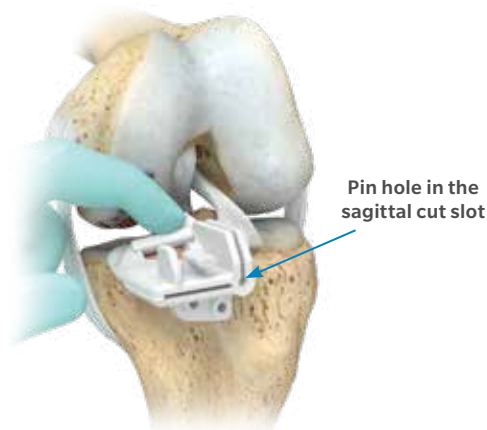


Figure 3

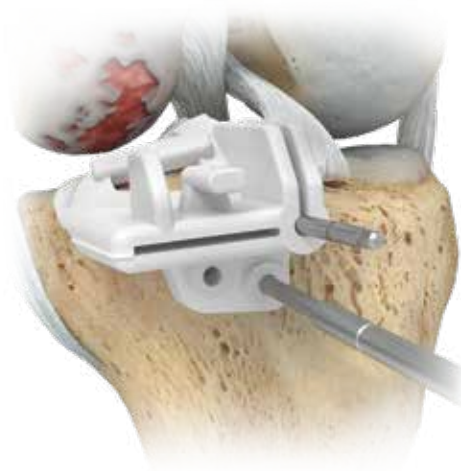


Figure 4

Place a Headless Trocar Drill Pin through the hole in the sagittal cut slot (Figure 3). Verify the guide location has not changed. Check the bone contact through the windows and around the perimeter of the guide.

☰ **Technique Tip:** Apply pressure to the top of the guide to avoid movement while drilling pins in place.

☰ **Technique Tip:** When using any headless trochar pin, it is important to leave 10 mm or more of the pin exposed. This will allow for ease of removal when using the pin puller.

☰ **Technique Tip:** Use caution when inserting the pin to avoid exiting the bone posteriorly.

Insert a Headless Trocar Drill Pin through the center hole (Figure 4). Then insert a Headless Trocar Drill Pin through the medial hole. Verify the guide did not move while placing the Headless Trocar Drill Pins.

Proximal Tibial Resection

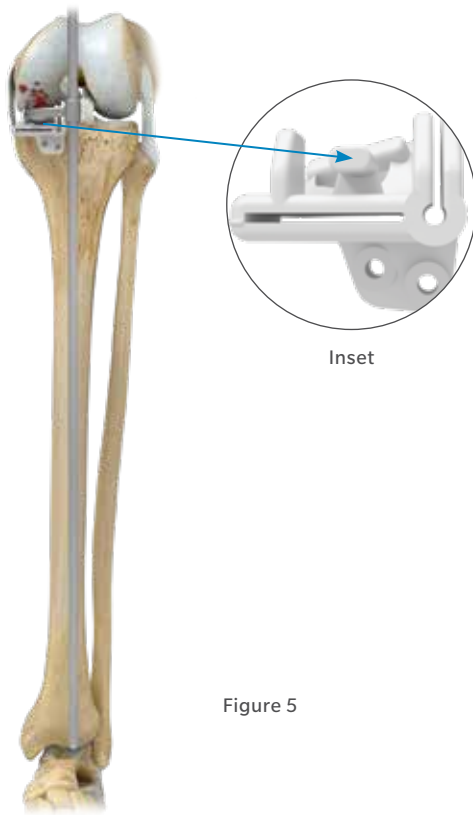


Figure 5

Place the Persona Partial Knee Alignment Tower onto the tibia guide (Figure 5 inset) to check the varus/valgus alignment of the planned proximal cut with the drop rod. The rod should be parallel with the tibia crest in the frontal plane (Figure 5).

🔑 **Technique Tip:** In order to maintain guide stability, it is recommended to perform horizontal (proximal) cut first.

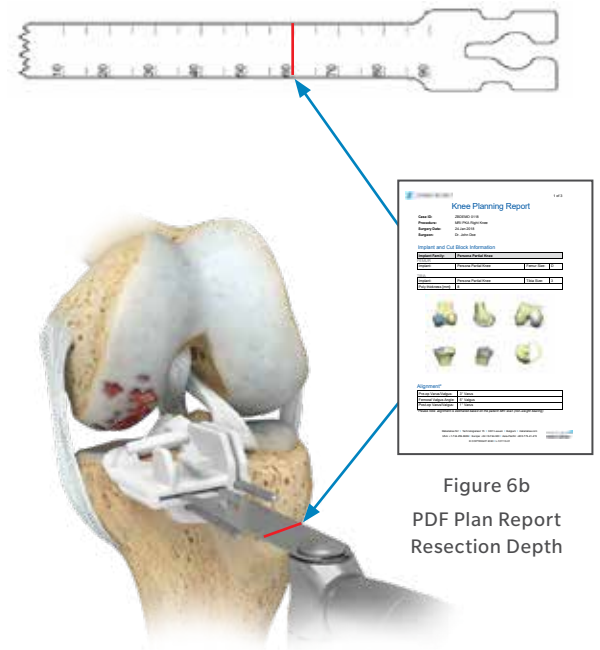


Figure 6b
PDF Plan Report
Resection Depth

Figure 6

Next, perform the horizontal (proximal) cut through the tibia cut slot using a narrow oscillating saw (1.27 mm thick, 12.5 mm wide) (Figure 6). The saw blade will make contact with the Trocar Drill Pin on the lateral side. Do not insert the saw blade more posteriorly than the pre-operatively planned saw blade excursion depth (Figure 6b).

Proximal Tibial Resection

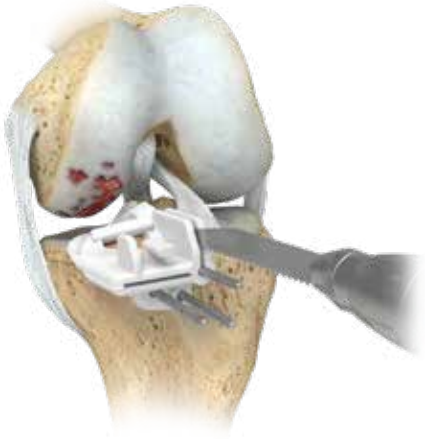


Figure 7

Perform the vertical (sagittal) cut through the sagittal tibia cut slot using a reciprocating saw (1.19 mm thick saw blade). The blade will stop on the Trocar Drill Pin at the distal end of the cut (Figure 7).

Remove the Headless Trocar Drill Pin from the vertical (sagittal) pin slot and slide the cut guide anteriorly off the remaining two pins.

Remove the medial tibia plateau. If required, complete the proximal cut to ensure complete removal of tibia plateau.



Figure 8

The two pins left in place in the tibia can be used to place the Persona Partial Knee tibial recutting guide (42-5399-051-95, 42-5399-052-95) onto the bone in case an additional 2 mm cut is needed (Figure 8).

Distal Femoral Condyle Resection

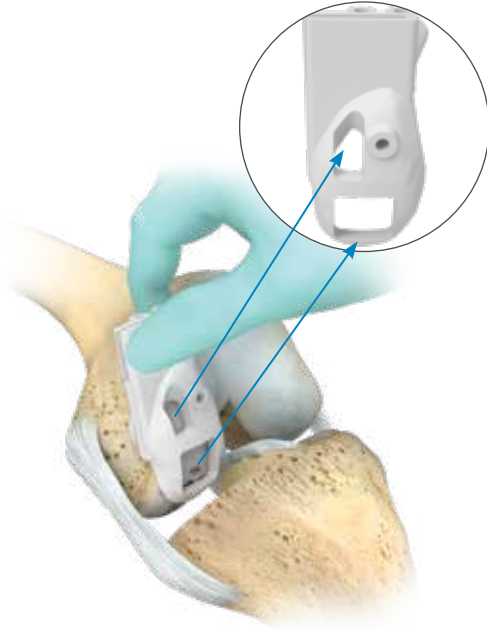


Figure 9



Figure 10

Position the femoral guide on the medial femoral condyle with the knee in approximately 45 degrees of flexion. Apply posterior pressure to the femoral cut guide and verify the unique and stable fit of the cut guide. Verify contact with bone through the windows and around the contact surface of the guide (Figure 9).

☰ **Technique Tip:** Dry the femoral condyle surface before positioning the femoral guide.

Extend the femur to full extension. Insert the tension guide (2 mm or 3 mm) between the femoral guide and the tibia cut to hold axial pressure and keep the guide in full contact with the bone.

☰ **Note:** The tension may vary depending on the laxity of the soft tissues.

Verify the fit of the cut guide. Then insert a 48 mm headed screw through the lateral hole (Figure 10).

Next, insert a 48 mm headed screw through the medial hole. Verify the guide did not move while placing the fixation screws.

☰ **Technique Tip:** The lateral femoral screw should be fixated first to minimize movement.

☰ **Technique Tip:** It is recommended that one person hold the guide to ensure the least amount of movement while a second person drills. Apply pressure on the distal and anterior positions of the guide.

☰ **Technique Tip:** Do not over torque the headed screw, this can lead to movement of the guide position. Reduce speed when the screw head is nearly seated against guide.

Distal Femoral Condyle Resection

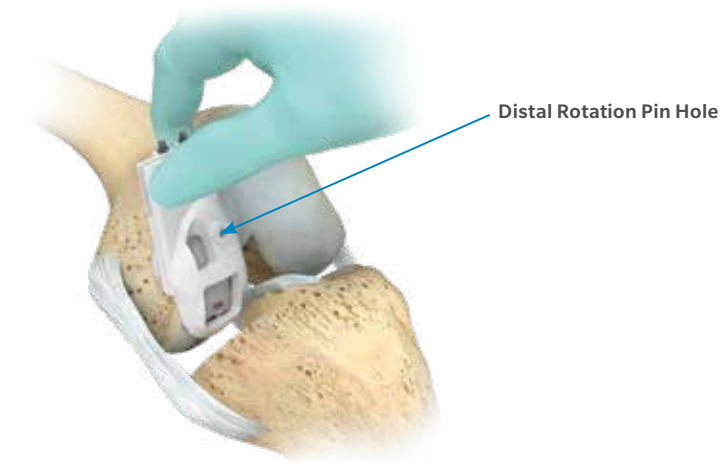


Figure 11

Remove the tension gauge and flex the knee slightly.

Ensure the femoral guide has not moved and is in contact with the bone through the windows.

In the distal rotation pin hole, insert the 33 mm screw and then extract the screw immediately (Figure 11). This hole in the distal femur is used as a reference for where the most anterior hole of the femoral finishing guide will be placed. The screw itself is not to be left in place at this stage in the technique.

Distal Femoral Condyle Resection

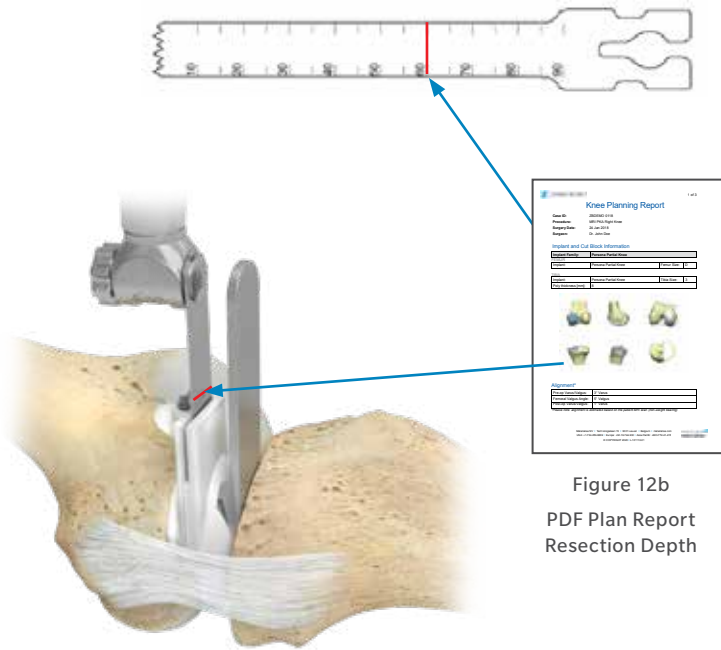


Figure 12

Figure 12b
PDF Plan Report
Resection Depth

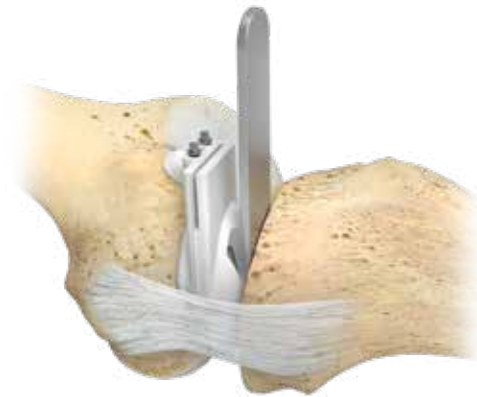


Figure 13

Extend the knee again with the femoral guide in position.

Insert the tension gauge (2 mm or 3 mm) in the joint space between the proximal cut and distal surface of the femoral guide (Figure 12).

ⓘ **Note:** The tension may vary depending on the laxity of the soft tissues.

Compress the knee joint so the tension gauge securely pushes the distal part of the femoral guide against the femoral condyle.

Perform the distal cut through the distal femoral cut slot using a narrow oscillating saw (1.27 mm thick, 12.5 mm wide) (Figure 13). Do not insert the saw blade more posteriorly than the pre-operatively planned saw blade excursion depth (figure 12b).

ⓘ **Technique Tip:** Ensure the saw blade is parallel with the cut slot to avoid moving the femoral guide.

ⓘ **Technique Tip:** Rotate the blade to cover the entire cut surface. If any remaining uncut bone remains, finish the resection by hand.

ⓘ **Technique Tip:** The PSI report will display the saw blade excursion depth and can be monitored if using an oscillating saw with depth markings.

Femoral Sizing



Figure 14

Femoral Sizing (cont.)

Remove the fixation screws and the PSI distal femoral cut guide.

Remove the distal bone resection.

Based on the pre-operatively planned femoral size, place the Femoral Finishing Guide onto the distal femur cut.

Align the proximal hole on the Femoral Finishing Guide over the pre-drilled distal hole location. Insert a screw through the proximal hole into the pre-drilled hole, shown in Figure 11.

Adjust the femoral rotation by rotating the Femoral Finishing Guide around the screw. The posterior surface of the femoral finishing guide should be parallel to the tibia cut. An underhang of 2-3 mm anteriorly is visible when the component is sized properly (Figure 14).

Fixate the Femoral Finishing Guide to the femur, and finish the femur according to the Persona Partial Knee Spacer Block surgical technique. Continue femoral preparation with traditional instrumentation.

Check Overall Alignment



Figure 15

Check Overall Alignment

Check overall alignment in extension using a gap checker with the desired poly thickness and the alignment rod (if preferred) (Figure 15).

Place the proximal end of the alignment rod at the center of the femoral head and distally at the center of the ankle. Relative to the midline of the knee, the rod will fall medial to the midline of the knee indicating the knee is not over corrected.

Size the Tibia



Figure 16

Final Tibial Preparation Surgical Technique


Verify the pre-operatively planned tibia size with the corresponding Tibial Sizer (Figure 16).




Finish the knee according to the Persona Partial Knee Spacer Block Surgical Technique.

Instrumentation

Product	Description	Part Number
	Persona Partial Knee PSI Femoral Cut Guide	110045559
	Persona Partial Knee PSI Tibia Cut Guide	110045559
	Persona Partial Knee PSI Tibia Cut Guide with Bone Model	110045560
	Persona Partial Knee PSI Femoral Cut Guide with Bone Model	110045560
	MIS Screw Inserter/Extractor	00-5983-049-00
	Headless Trocar Drill Pin	00-5901-020-00
	48 mm MIS Headed Screw	00-5983-040-48
	33 mm MIS Headed Screw	00-5983-040-33
	Alignment Rod	00-5785-079-00
	Alignment Rod with Coupler	00-5785-080-00
	PPK Alignment Tower	42-5399-006-35
	Tension Gauge	00-5789-071-00

Instrumentation (cont.)

Product	Description	Part Number
	Tibial Sizing Spoons	42-5399-080-34 42-5399-080-56 42-5399-080-78 42-5399-080-90
	Flexion/Extension Gap Checker	42-5099-035-08 42-5099-035-09 42-5099-035-10 42-5099-035-12 42-5099-035-14

Product	Description	Side	Size	Part Number
	Persona Partial Knee Femoral Finishing Guide	Left Medial	1	42-5781-001-01
			2	42-5781-002-01
			3	42-5781-003-01
			4	42-5781-004-01
			5	42-5781-005-01
			6	42-5781-006-01
			7	42-5781-007-01
		Right Medial	1	42-5781-001-02
			2	42-5781-002-02
			3	42-5781-003-02
			4	42-5781-004-02
			5	42-5781-005-02
			6	42-5781-006-02
			7	42-5781-007-02
	Persona Partial Knee 5 Degree Captured Tibial Cut Guide	Left Medial	–	42-5399-051-95
		Right Medial	–	42-5399-052-95
	Persona Partial Knee 2 mm Tibial Recutter	Left Medial	–	42-5399-053-95
		Right Medial	–	42-5399-054-95

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