

LEGION POROUS HA Tibia



LEGION[◇] POROUS HA Tibia

Product highlights

The LEGION POROUS HA tibial base plate incorporates features preferred by POROUS surgeons from both the PROFIX[◇] and GENESIS[◇] II POROUS tibial baseplates. This was accomplished in large part by blending the proximal geometry of the GENESIS II POROUS tibia system with the distal geometry of the PROFIX system. The resulting product is incorporated into a POROUS platform, complete with intraoperative flexibility and fixation options.

Proximal design elements of GENESIS II include:

- GENESIS II lock mechanism to accept GENESIS II/LEGION inserts
- GENESIS II screw hole pattern for initial stability
- 3° of posterior slope to enable the use of GENESIS II/LEGION instrumentation



Distal design elements of PROFIX include:

- PROFIX antirotation pegs aid in initial stability
- Increased base plate thickness enhances overall strength, similar to PROFIX design and rationale
- Ability to accept PROFIX metaphyseal stems for rotational stability of the implant
- Titanium sintered bead coating for in-growth capability
- HA coated



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Please refer to the standard surgical technique for the femoral and patellar preparation and implantation of the knee.

Nota Bene

The technique description herein is made available to the healthcare professional to illustrate the authors' suggested treatment for the uncomplicated procedure. In the final analysis, the preferred treatment is that which addresses the needs of the patient.

Distal First Cut

Tibial preparation

Extramedullary tibial alignment: Assemble the extramedullary tibial guide with the non-spiked (shown) or spiked rod and place on tibia. Align guide over medial third of the tibial tubercle and parallel to the tibia.



Intramedullary tibial alignment: Place the intramedullary alignment assembly on the tibia. The alignment rod should align with the medial third of the tibial tubercle. Impact assembly.



Attach the tibial stylus to the tibial cutting block and lower the cutting block until the stylus touches the lowest point on the least affected side of the tibia. Once the resection level is determined, insert pins to secure and remove the alignment assembly.



Resect the proximal tibia.



Size the tibia. Perform trial range of motion. Position base plate and if using extramedullary tibial alignment, punch for taper using the straight punch.



Select the appropriate LEGION® tibial implant and attach, if desired, the PROFIX® metaphyseal stem (please see page 15 for appropriate part numbers). Seat the tibial implant with the tibial impactor.



Use the angled screw drill guide to drill holes and the depth gauge to determine screw length. Insert screws and tighten.



Attach the articular inserter/extractor to the tibial tray (for standard inserts). Lift inserter superiorly until the anterior lip of the insert is fully seated.



Tibial alignment

The system allows the surgeon to perform either extramedullary or intramedullary tibial alignment. For intramedullary tibial alignment, turn to page 9.

When using the extramedullary tibial alignment, the surgeon may use a non-spiked or spiked fixation rod. For tibial preparation using the extramedullary guide with a non-spiked fixation rod see below. For tibial preparation using the extramedullary guide with a spiked rod, turn to page 7.

Extramedullary tibial alignment

Instrument assembly

- a Insert the ankle clamp into the distal end of the alignment tube and thread the locking pin into the ankle clamp (Figure 1).
- b After the ankle clamp is moved into the proper position, lock into place with the gold knob.
- c Choose the correct left or right tibial cutting block. Select the spiked or non-spiked fixation rod.



Figure 1

Non-spiked fixation rod

Instrument assembly

- a Place the appropriate left or right tibial cutting block on top of the disc on the non-spiked fixation rod (Figure 2). Tighten the central knob to lock the block into position.
- b Introduce the rod into the extramedullary assembly and adjust and lock the cam in the assembly.



Figure 2



Figure 3

- 1 Place the arms of the extramedullary alignment clamp around the ankle, and adjust the distal M-L slide directly over the middle of the tibiotalar joint, which is also approximated by the second ray of the foot proximal to the malleoli (Figure 3). The cutting block on the proximal end of the assembly should be proximal to the tibial tubercle (Figure 4).



Figure 4

2 Assess rotation of the alignment guide and slope of the cutting plane. The goal is to align the extramedullary alignment assembly rotationally so that it aligns over the medial third of the tibial tubercle and over the second toe (Figure 5).

3 Rotational alignment is critical due to the 3° posterior sloped cut. The slope can be adjusted according to the patient's anatomy (Figure 6).

Note: 3-5° of slope is built into the articular insert (depending on which insert is chosen) and 3° of slope is built into the tibial cutting block. A neutral or slightly sloped alignment should usually be chosen.

Tip: Neutral or minimally sloped alignment may be achieved by palpating the fibula followed by aligning the alignment guide parallel to the fibula. Tibial bowing and soft tissue bulk may make external tibial referencing unreliable.



Figure 5



Figure 6

Spiked fixation rod

Instrument assembly

- a Place the spiked fixation rod through the central anterior hole in the tibial cutting guide; adjust the block and tighten the central knob to lock the block in position.
 - b Introduce the spiked fixation rod into the proximal end of the alignment assembly and adjust and lock the cam on the assembly (Figure 7).
- 1 Place the arms of the extramedullary alignment clamp around the ankle, and adjust the distal M-L slide directly over the middle of the tibiotalar joint, which is also approximated by the second ray of the foot proximal to the malleoli (Figure 8). The cutting block on the proximal end of the assembly should be proximal to the tibial tubercle (Figure 9).
 - 2 Impact the longer spike of the spiked fixation rod into the proximal tibia (Figure 10).



Figure 9



Figure 10

3 Assess rotation of the alignment guide and slope of the cutting plane. The goal is to align the extramedullary alignment assembly rotationally so that it aligns over the medial third of the tibial tubercle and over the second toe (Figure 11).

4 Rotational alignment is critical due to the 3° posterior sloped cut. The slope can be adjusted according to the patient's anatomy (Figure 12). Impact the second spike to secure the assembly (Figure 13).

Note: 3-5° of slope is built into the articular insert (depending on which insert is chosen) and 3° of slope is built into the tibial cutting block. A neutral or slightly sloped alignment should usually be chosen.

Tip: Neutral or minimally sloped alignment may be achieved by palpating the fibula followed by aligning the alignment guide parallel to the fibula. Tibial bowing and soft tissue bulk may make external tibial referencing unreliable.



Figure 11



Figure 12



Figure 13

Intramedullary tibial alignment

Instrument assembly

- a Insert the external rod of the intramedullary tibial alignment guide through the middle hole on the correct left or right tibial cutting block and lock the cam (Figure 14).
 - b Attach the T-handle to the IM rod and pass it through the cannulated alignment sleeve on the alignment assembly (Figure 15).
- 1 Make a 9.5mm pilot hole into the tibial canal (Figure 16) (generally 2-3mm medial to the midline). A preliminary resection of the tibial spine may facilitate seating of the tibial drill guide onto the proximal tibia.

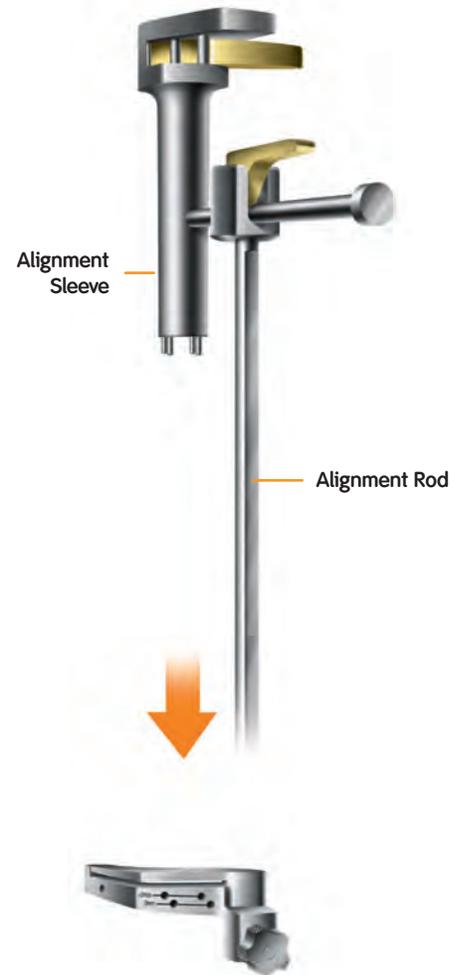


Figure 14



Figure 15



Figure 16

2 Slowly insert the IM rod into the tibial canal.

3 Assess rotation of the intramedullary tibial alignment guide. Rotational alignment is critical due to the 3° posterior sloped cut. The alignment rod of the intramedullary tibial alignment assembly should align with the medial third of the tibial tubercle (Figure 17).

4 Impact the proximal end of the cannulated alignment sleeve to drive the distal spikes into the proximal tibia to lock rotational alignment (Figure 18).



Figure 17

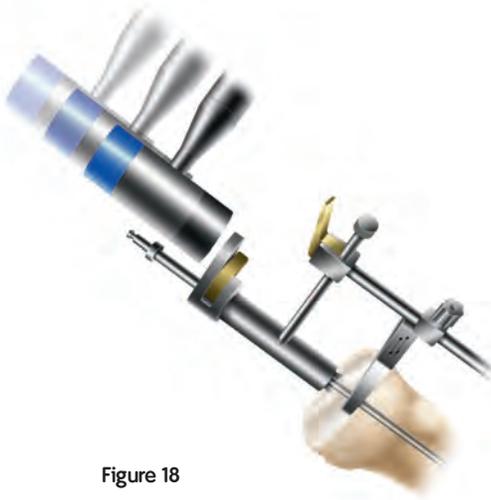


Figure 18

Tibial resection

- 1 Attach the tibial stylus to the tibial cutting block by inserting the stylus foot into the cutting slot.
- 2 Lower the cutting block until the stylus touches the low point on the less affected side of the tibia (Figure 19). Set the desired tibia resection knowing that the minimal thickness insert is 9mm. The implant base plate is thicker by approximately 1mm and may require an additional 1mm resection of the proximal tibia.
- 3 Pin the tibial cutting block to the tibia by inserting pins first through the central holes; then the oblique hole.

Tip: Pinning through the central holes marked 0mm with smooth pins will allow the block to be moved +2mm should additional resection be required (Figure 20).

Tip: A 9mm insert is the thinnest available implant.

Tip: To do an extramedullary alignment check, place the extramedullary alignment rod through the tibial cutting block.



Figure 19



Figure 20

4 To remove the assembly:

a For the intramedullary alignment assembly, use the universal extractor leaving the cutting block on the anterior tibia (Figure 21) after loosening the thumbscrew.

b For the extramedullary assembly with spiked rod, release the cam at the top of the alignment tube and use the slap hammer to remove the spiked fixation rod (Figure 22) after loosening the thumbscrew.

c The extramedullary assembly with the non-spiked rod may be left in place or removed by loosening the thumbscrew and lowering the non-spiked rod to disengage from the tibial cutting block.



Figure 21



Figure 22

5 Cut the tibia by first directing the blade in the posterior direction and then laterally (Figure 23).

6 Check alignment and balance with spacer block and rod (Figures 24 and 25). Balance ligaments in standard fashion.

Tip: If you are using a spacer block from an older GENESIS® II set, use the extension end to check both flexion and extension spaces.



Figure 23



Figure 24



Figure 25

Tibial sizing

Stemless tibial trials

- 1 Attach a quick-connect handle to a stemless trial one size below the femoral component size and place on the cut tibia to assess coverage (Figure 26). As needed, additional sizes should be templated using the stemless trials.
- 2 Once the appropriate size is determined, pin the medial size of the selected stemless trial with a short headed pin.
- 3 Place a trial insert into the stemless tibial trial tray and perform a trial range of motion to allow the baseplate to center on the femoral trial. (As a secondary check, the surgeon may pass the alignment rod through the quick-connect handle to assess alignment) (Figure 27). Pin the lateral side of the trial.
- 4 After putting the knee through a trial range of motion, the surgeon should note the proper rotation of the trial tibial component on the proximal tibia and mark the tibia for future reference.

Tip: The center line marks on the femoral and tibial trial components usually line up.

- 5 If extramedullary alignment was used a hole will need to be made in the tibia to accommodate the distal taper of the implant. Use the 11mm tibial straight punch (71440262) to make the initial hole in the tibial plateau.

Tip: In the case of sclerotic bone, first drill for the stem using the 11mm tibial drill.



Figure 26

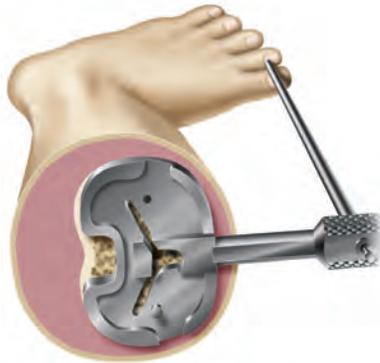


Figure 27

Tibial implantation

The surgeon recommendation is to utilize the metaphyseal stem on the porous tibia implant.

PROFIX® Tibial Metaphyseal Stems:

Part Number	Length	Diameter
71501010	55mm	18mm
71501020	60mm	20mm

- 1 Select the correct sized LEGION® POROUS tibial base plate and metaphyseal stem.
- 2 Align the keyed marks on the stem extension with the marks on the taper of the tibial implant and impact onto the tibial implant. Firmly impact the stem several times to assure a rigid lock of the morse taper.
- 3 If the locking tibial tray implant impactor (71440472) is used, position the implant so the cautery (rotational) markings on the proximal tibia are aligned with the markings on the tibial implant. Slowly force the tibial implant with the PROFIX metaphyseal stem into the proximal tibia. Remove the alignment guide once the tibial stem has established alignment.

Tip: Once the metaphyseal stem starts to engage the rotation of the tibia is fixed.

- 4 Using the non-locking tibial Impactor, seat the tibial implant on the proximal tibia (Figure 28).
- 5 Orient the tibial screw drill guide (71440866) over the holes and drill using the tibial screw drill (Figure 29).
- 6 Use the depth gauge (71514602) to determine the screw length.
- 7 Insert the appropriate sized 6.5mm screw and tighten, alternate the tightening of each screw to avoid liftoff.
- 8 Reinsert the GENESIS® II/LEGION articular insert trial and the femoral trials and assess range of motion.



Figure 28



Figure 29

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