

# NAVIO Bone Tracking Set-up

## Placing Tracking Hardware

Rigid fixation of the femur and tibia tracking frames to the bone is critical for a successful NAVIO<sup>◇</sup>-assisted surgery. The NAVIO system utilizes a two-pin bi-cortical fixation system. This fixation system is installed using bone screws, a tissue protector, and tracker clamps. Once fixed to the bone, the tracking frames are oriented towards the optical tracking camera so the markers are in view. With the operative leg in approximately 90° of flexion, utilize the following procedure:



## Bone screw placement

### Warnings:

- Place bone pins properly to avoid hitting critical anatomy.
- Do not clamp onto the threads of the pin when using a surgical drill to place bone pins.
- Do not drill through the second cortex (Figure 1).

**Note:** The bone pins must engage the second cortex on the femur and tibia bones for stable fixation, however; there is an increased risk of patient injury if the bone pin perforates the outside of the bone.

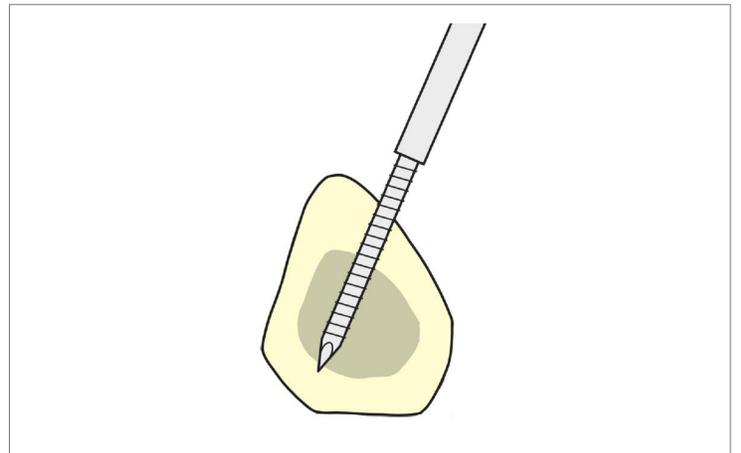


Figure 1

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## Tibia

Position the tissue protector one hands breadth inferior of the tibia tubercle, slightly medial to the tibial crest, ensuring the tissue protector is perpendicular to the flat (medial) surface of the tibial shaft (Figure 2).

**Warning:** Be sure to place the proximal bone pin one hands breadth inferior of the tibia tubercle to prevent interference with the final implant.



Figure 2

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## Femur

Position the tissue protector one hands breadth superior of the patella in the anterior portion of the femoral shaft centered medio-laterally (Figure 3).



Figure 3

## Bone screw insertion

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- Firmly press down on the tissue protector to mark the skin (Figures 2 and 3).
- Pierce the skin, using a stab incision, down to the bone, in both locations.
- Clear the soft tissue at the incisions, and place the tissue protector into the incisions, to prevent the bone screw from engaging with soft-tissue.

- Drill the first bone screw through the tissue protector, perpendicular to the surface of the bone.

**Note:** Do not bottom out the pin driver on to the tissue protector during this stage (Figure 4).

- Drill the second bone screw into the bone slowly, perpendicular to the bony surface, taking care to only engage the opposing cortex. Take care not to perforate the opposing cortex (Figure 4).

**Note:** The tissue protector is not a depth guide.

- Remove the tissue protector by pulling it up and over the bone screws.



Figure 4

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- Clamp the respective arrays into the bone clamp along the length of the bar on the array. Place the smaller sides of the arrays closet to the operative site (Figure 5).
- Orient the markers toward the camera and slide the array away from the incision site.
- Position the tracker array on the flat side.



Figure 5

- Tighten the tracker and clamp using the T-handle, being careful to support the bone screws to prevent torsional force (Figure 6).

**Note:** When tightening the array make sure to tighten the clamp on the flat side and not on the corners.



Figure 6

- Take the leg through a range of motion in the camera adjustment stage. Ensure that the trackers are visible during this step, and adjust position, if necessary (Figure 7).

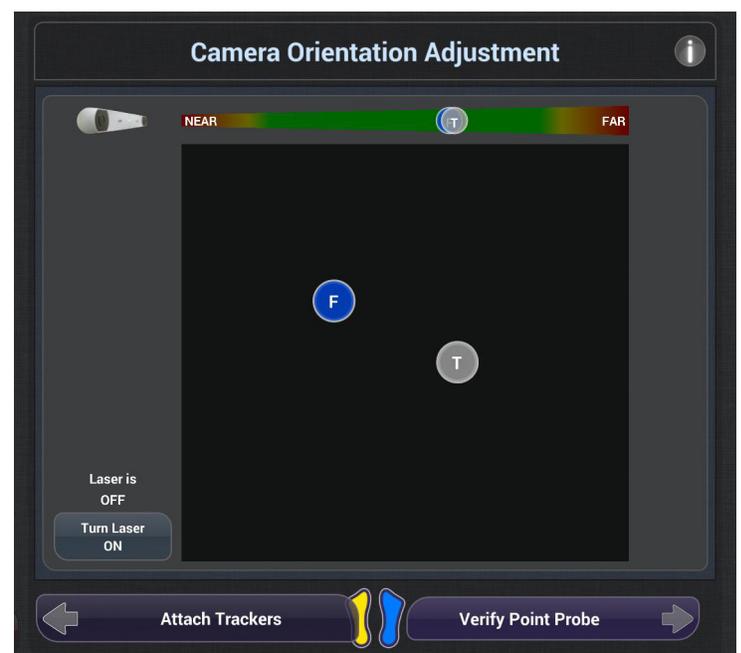


Figure 7

Prior to performing this technique, please consult the Instructions for Use documentation provided with each device for additional health and safety information, including indications, contraindications, warnings and precautions.

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11882 V1 02/19

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