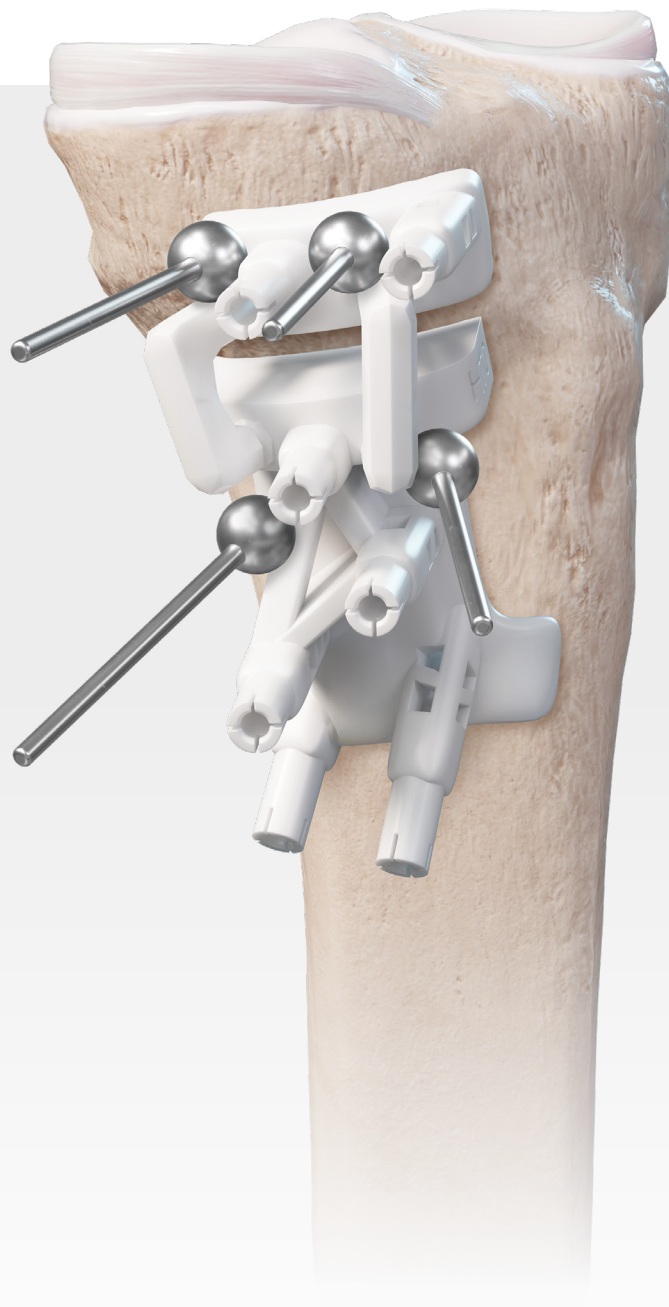


# ContourLock™ HTO With Patient-Specific Instrumentation (PSI)

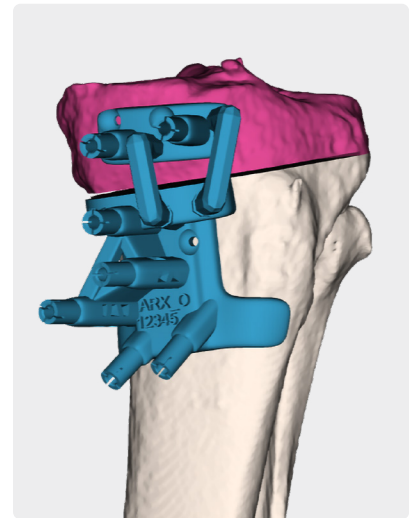
Surgical Technique



# Tibial Opening Wedge Osteotomy With 3D PSI Guide

In recent years, scientific literature has supported the growing use of 3D-printed, patient-specific instrumentation (PSI) guides for osteotomy procedures to correct malalignment of the knee. Arthrex PSI guides can easily integrate into existing osteotomy procedures, simplifying preoperative planning, saving time,<sup>1</sup> providing more accurate correction,<sup>2,3</sup> and improving patient outcomes.<sup>4</sup>

- › Easily integrate by simply uploading patient CT scans to the secure platform to design 3D cutting guides
- › Improved postoperative range of motion and pain levels as compared to non-patient-specific osteotomy<sup>1,4</sup>
- › Reduce radiation exposure as compared to traditional osteotomy planning using fluoroscopy<sup>1,2</sup>
- › Available for multiple techniques, including high tibial osteotomy (HTO), distal femoral osteotomy (DFO), and iBalance® HTO osteotomy systems



## Preparation Checklist

### Preoperative Planning

- › Upload the patient CT scan to the 3D planning platform here: <https://arthrexpsi.com/login>
- › Confirm pathology, procedure details, and planned surgery date (at least 4 weeks required between CT upload and surgery date)
- › Surgeon must review and approve the patient-specific surgical plan

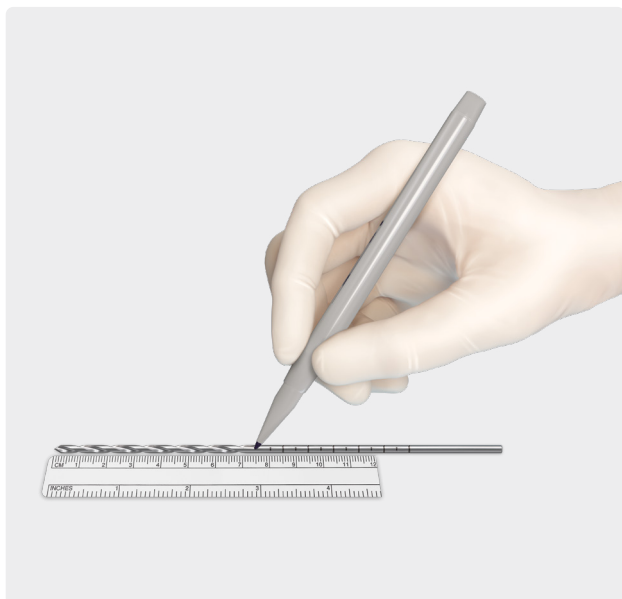
### Patient-Specific Instrumentation

- › ContourLock™ 3D PSI guide
- › Nylon bone block for tactile fit confirmation
- › Osteotomy wedge validator

### Implants and Instruments

- › ContourLock 4-hole plate and screws (prior to surgery, reference the preoperative surgical plan for exact sizes and part numbers)
- › BB-Taks (qty. 4 [AR-8970-09T])
- › 3.2 mm drill bits (qty. 3 [AR-13319])
- › Osteotomy jack (AR-13333)
- › HTO drill guide (AR-13321) for procedures including unguided screws
- › Osteotomy wedges, bone void filler, and ACP or autologous blood products

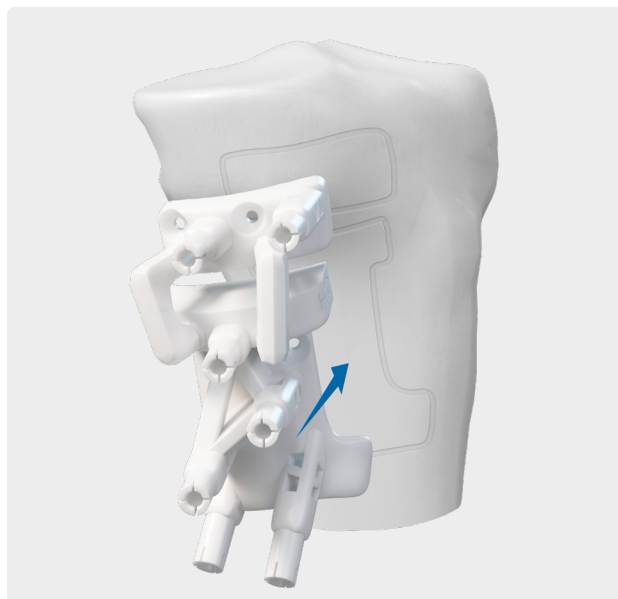
## Surgical Technique



1

Referencing the patient-specific surgical plan, measure each 3.2 mm drill to the planned drill depth and mark it with a sterile surgical pen.

**Note:** These depth marks provide a clear visual reference to control drilling depth during fixation and osteotomy preparation.



2

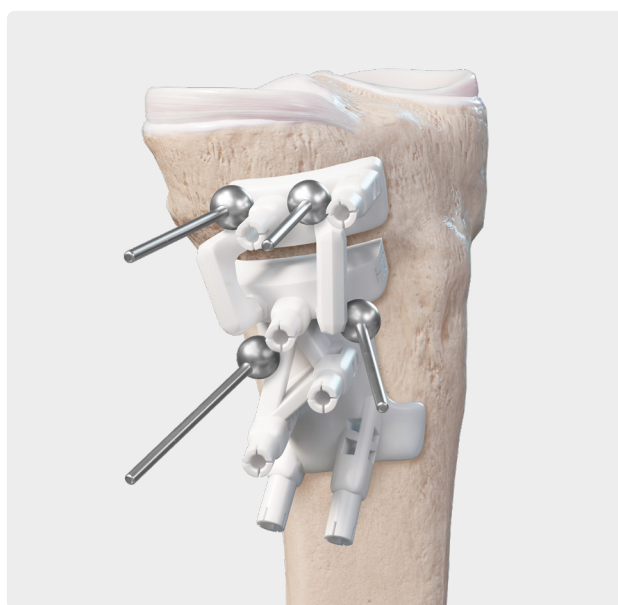
Before beginning, seat the ContourLock™ PSI guide against the patient-specific nylon bone block to confirm correct fit and feel. The nylon bone block has embossed lines representing the intended placement location of the guide, allowing the surgeon to confirm the tactile sensation of correct PSI placement before positioning the guide on the patient's anatomy.



3

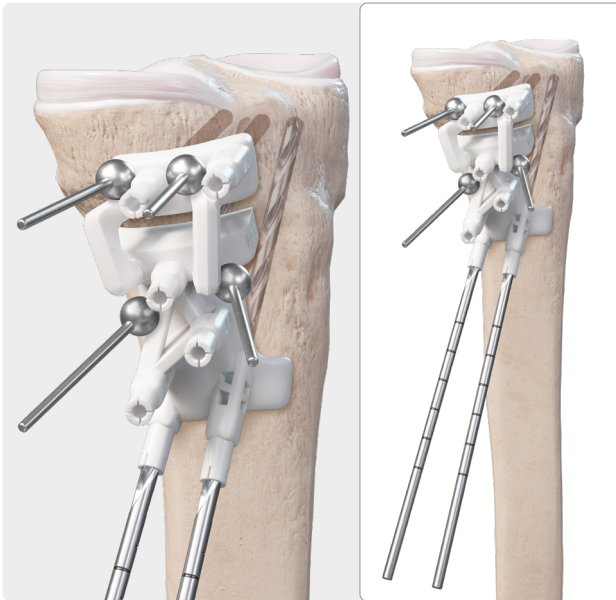
Make an incision between the MCL and the patellar tendon and reflect the soft tissue to expose the proximal medial tibia.

Position the ContourLock PSI guide against the bone, ensuring all aspects of the guide sit flush against the patient's anatomy and matching the fit confirmed on the nylon bone block.



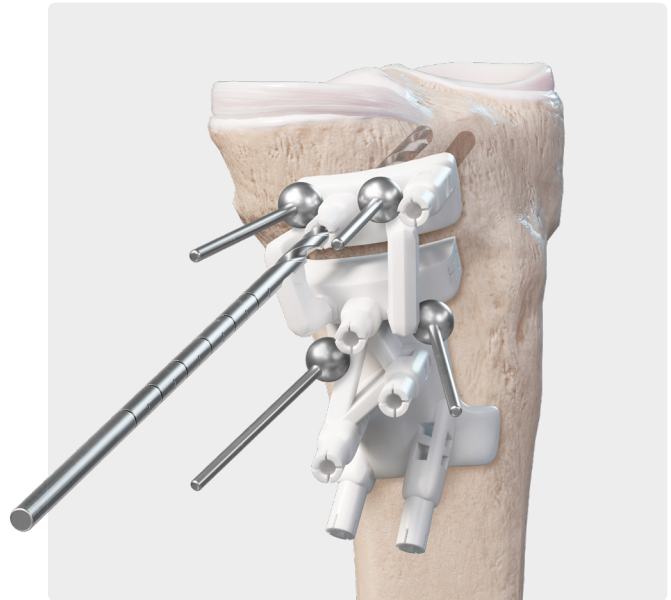
4

With the ContourLock PSI guide held flush against the bone, insert 2 BB-Taks into the superior BB-Tak holes, followed by 2 BB-Taks into the inferior BB-Tak holes as directed by the guide to secure it to the tibia.



**5**

Following the patient-specific surgical plan, insert two marked 3.2 mm drill into the distal guide drill holes, to the depth outlined in the surgical plan, and leave them in place. These will serve as your transtibial hinge protection pins.



**6**

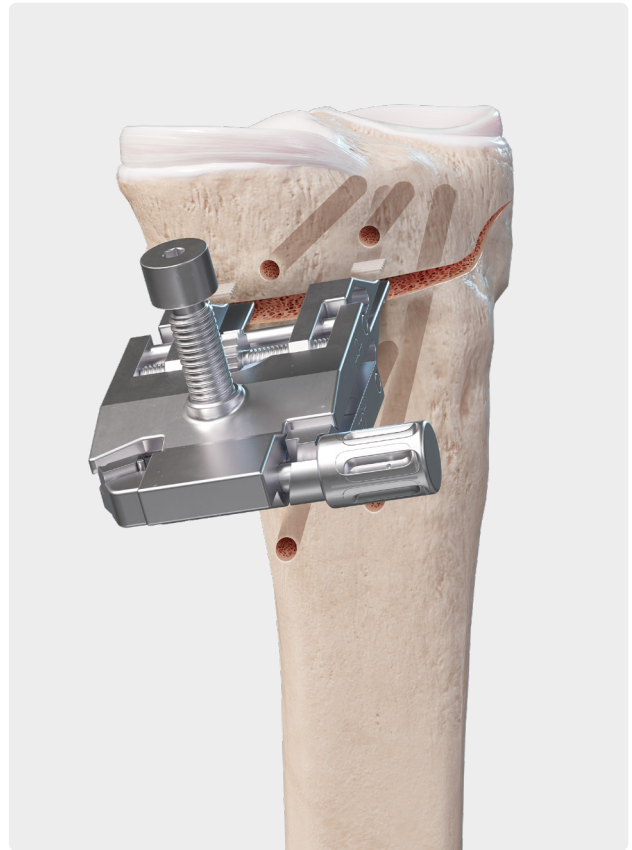
Using a marked 3.2 mm drill, drill through the 3 distal oblique drill guide holes to the depth outlined in the patient-specific surgical plan. Repeat for the 2 proximal drill holes. These holes serve as the final fixation points for the ContourLock™ plate.

Using a rongeur, cut all bridge connections on the PSI guide as distally as possible to separate it into its superior and inferior parts, then remove the superior BB-Taks and the superior portion of the guide.



**7**

Place the saw flat against the superior surface of the distal PSI guide. Begin resecting toward the oblique guide pins to the depth outlined in the patient-specific surgical plan. Remove the remaining BB-Taks, guide pins, and the inferior portion of the PSI guide.



**8**

Use the osteotomy jack or another suitable instrument to gradually open the osteotomy site, raising it to the correction angle defined in the patient-specific surgical plan.



**9**

Insert the patient-specific osteotomy wedge validator into the opening to confirm the osteotomy has been opened to the correct height and angle **(a)**. The validator confirms the opening matches the patient-specific surgical plan before the construct is finalized.

**Note:** Refer to the patient-specific surgical plan to guide validator placement.



**10**

Place the ContourLock™ plate on the medial tibia, aligning it with the previously drilled holes, and introduce the appropriate screws per the patient-specific surgical plan.

Drill any unguided screw holes using the HTO drill guide, following the planned screw depth outlined in the surgical plan.

Fill the osteotomy void with osteotomy wedges treated with autologous blood products, bone graft, or flowable calcium phosphate cement.

**Note:** Reference the laser lines on the drill when using the drill guide for unguided screws.

## Ordering Information

|                                                                             |                            |
|-----------------------------------------------------------------------------|----------------------------|
| HTO ContourLock™ patient-specific guide                                     | AR-13700PSG                |
| <b>ContourLock HTO Plates</b>                                               |                            |
| ContourLock HTO plate, flat, left, 67 mm                                    | AR-13730-01                |
| ContourLock HTO plate, flat, left, 71 mm                                    | AR-13730-02                |
| ContourLock HTO plate, flat, left, 84 mm                                    | AR-13730-03                |
| ContourLock HTO plate, flat, right, 67 mm                                   | AR-13735-01                |
| ContourLock HTO plate, flat, right, 71 mm                                   | AR-13735-02                |
| ContourLock HTO plate, flat, right, 84 mm                                   | AR-13735-03                |
| <b>HTO Plate Screws</b>                                                     |                            |
| HTO plate screws, titanium, cortical, 4.5 mm × 26-60 mm (2 mm increments)   | AR-13380-26 to AR-13380-60 |
| HTO plate screws, titanium, cancellous, 6.5 mm × 25-65 mm (5 mm increments) | AR-13280-35 to AR-13280-70 |
| <b>Accessories</b>                                                          |                            |
| Patellar tendon retractor                                                   | AR-13312                   |
| Medial retractor for HTO                                                    | AR-13313                   |
| Drill for HTO titanium screws, qty. 6                                       | AR-13319                   |
| Osteotomy jack, 25 mm                                                       | AR-13323-25                |
| Osteotomy jack                                                              | AR-13333                   |
| BB-Taks                                                                     | AR-8970-09T                |
| <b>Bone Graft Substitute</b>                                                |                            |
| Quickset™ cement 16 cc kit                                                  | ABS-3016                   |
| AlloSync™ DBM putty, 5 cc                                                   | ABS-2012-05                |
| AlloSync DBM putty, 10 cc                                                   | ABS-2012-10                |

Products advertised in this brochure/surgical technique guide may not be available in all countries. For information on availability, please contact Arthrex Customer Service or your local Arthrex representative.

## References

- Carey EG, Kamath AF, Vidal AF, et al. Assessing the impact of patient-specific instrumentation and fixation on accuracy and radiation exposure in a cadaveric model of medial opening-wedge high tibial osteotomy. *Orthop J Sports Med.* 2025;13(1):23259671241285430. doi:10.1177/23259671241285430
- Dasari SP, Hevesi M, Mameri E, et al. Patient-specific instrumentation for medial opening wedge high tibial osteotomies in the management of medial compartment osteoarthritis yields high accuracy and low complication rates: a systematic review. *J ISAKOS.* 2023;8(3):163-176. doi:10.1016/j.jisako.2023.02.001
- Mao Y, Xiong Y, Li Q, et al. 3D-printed patient-specific instrumentation technique vs. conventional technique in medial open wedge high tibial osteotomy: a prospective comparative study. *Biomed Res Int.* 2020;2020:1923172. doi:10.1155/2020/1923172
- Yang JC, Chen CF, Luo CA, et al. Clinical experience using a 3D-printed patient-specific instrument for medial opening wedge high tibial osteotomy. *Biomed Res Int.* 2018;2018:9246529. doi:10.1155/2018/9246529

This description of technique is provided as an educational tool and clinical aid to assist properly licensed medical professionals in the usage of specific Arthrex products. As part of this professional usage, the medical professional must use their professional judgment in making any final determinations in product usage and technique. In doing so, the medical professional should rely on their own training and experience and should conduct a thorough review of pertinent medical literature and the product's directions for use. Postoperative management is patient-specific and dependent on the treating professional's assessment. Individual results will vary and not all patients will experience the same postoperative activity level or outcomes.



Arthrex manufacturer, authorized representative, and importer information (Arthrex eIFUs)



US patent information