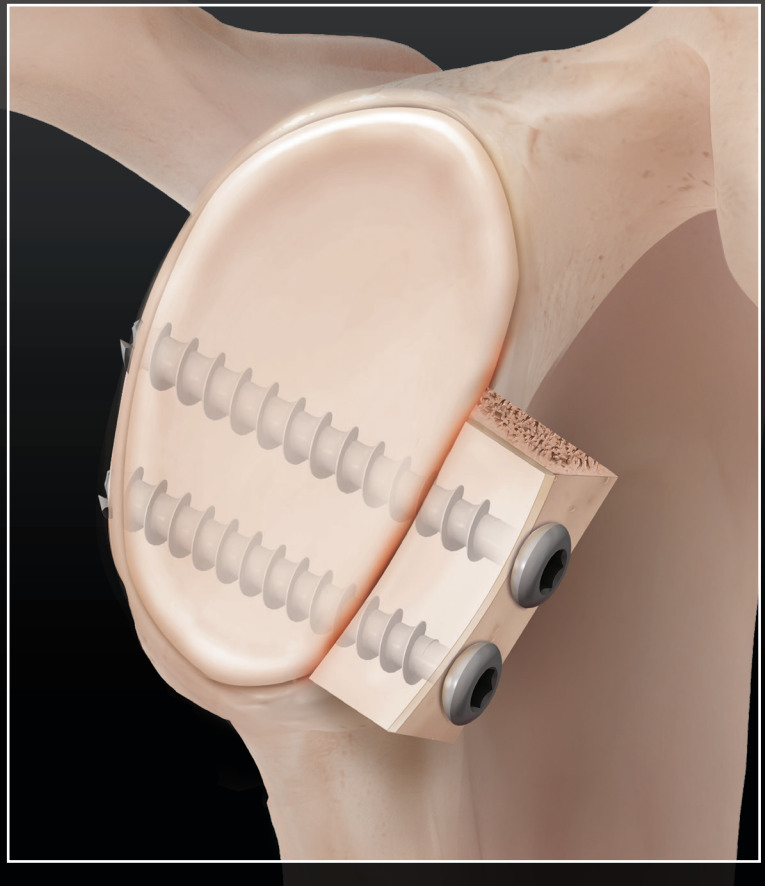
Arthrex®

Distal Tibia Allograft Workstation for Glenoid Bone Loss

Surgical Technique



Distal Tibia Allograft Workstation

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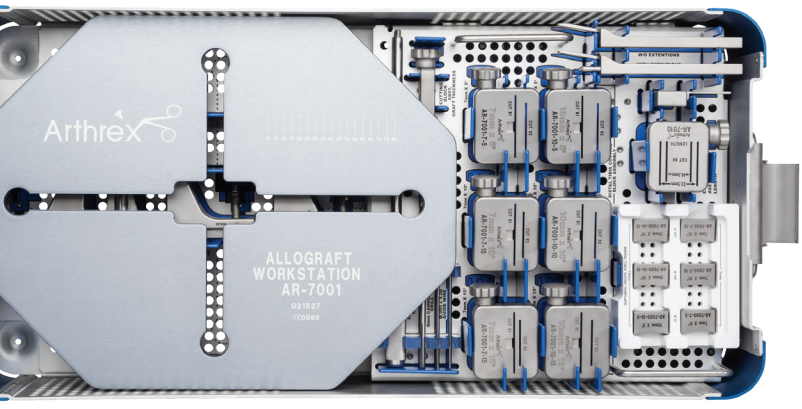
Introduction

Treatment of shoulder instability caused by bony pathology is complex and challenging. A novel technique has been described for the management of glenoid bone deficiency using fresh distal tibia allograft by Dr. Matthew T. Provencher et al. The lateral portion of the distal tibia has been shown to be a great allograft source because of its articular conformity to the humeral head, given its anatomic fitting to the glenoid. Moreover, the allograft is made up of dense bone, and provides a cartilaginous articular surface for the humeral head.[1,2]

The Arthrex Distal Tibia Allograft Workstation facilitates harvesting of fresh osteochondral distal tibia allograft to help surgeons address the complex issue of shoulder instability caused by bony pathology in conjunction with the Arthrex Glenoid Bone Loss Set. This unique instrumentation set has been designed to allow for a customizable yet more consistent, reproducible allograft preparation.



The distal tibia allograft workstation and surgical technique guide were developed in collaboration with Dr. Matthew T. Provencher, MD (Vail, CO).

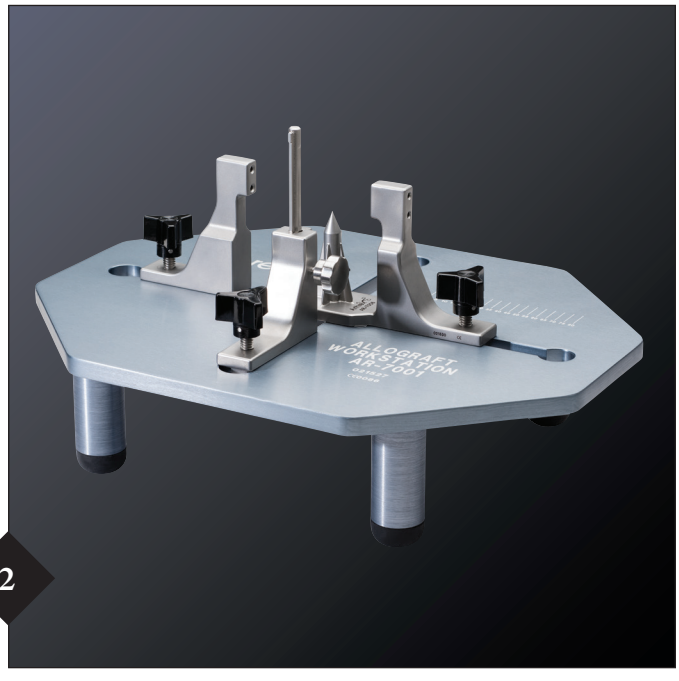
References:

1. Provencher MT, Ghodadra N, LeClere L, Solomon DJ, Romeo AA. Anatomic osteochondral glenoid reconstruction for recurrent glenohumeral instability with glenoid deficiency using a distal tibia allograft. *Arthroscopy.* 2009;25(4):446-452. doi:10.1016/j.arthro.2008.10.017.

2. Provencher MT, Frank RM, Golijanin P, et al. Distal tibia allograft glenoid reconstruction in recurrent anterior shoulder instability: clinical and radiographic outcomes. *Arthroscopy.* 2017;33(5):891-897. doi:10.1016/j.arthro.2016.09.029.

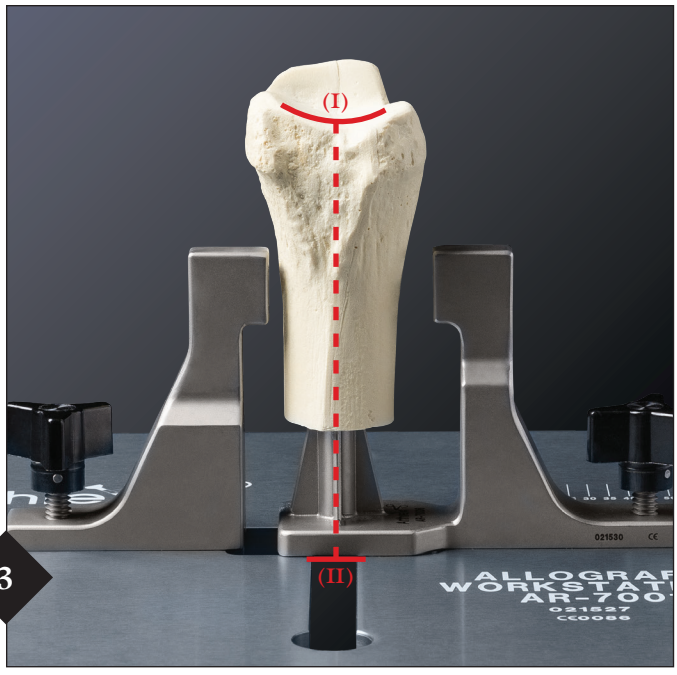
1

Prepare the glenoid defect to create a uniform surface that is as perpendicular as possible to the glenoid articular surface. Affix the handle to one of the 6 sizing template blocks to determine the desired angle (5°, 10°, or 15°) and anterior to posterior length (7 mm or 10 mm) of the final graft to best match the defect. The sizing blocks have a fixed length of 22 mm, the final allograft width (18 mm or 23 mm superior to inferior) can be adjusted during the cutting process.



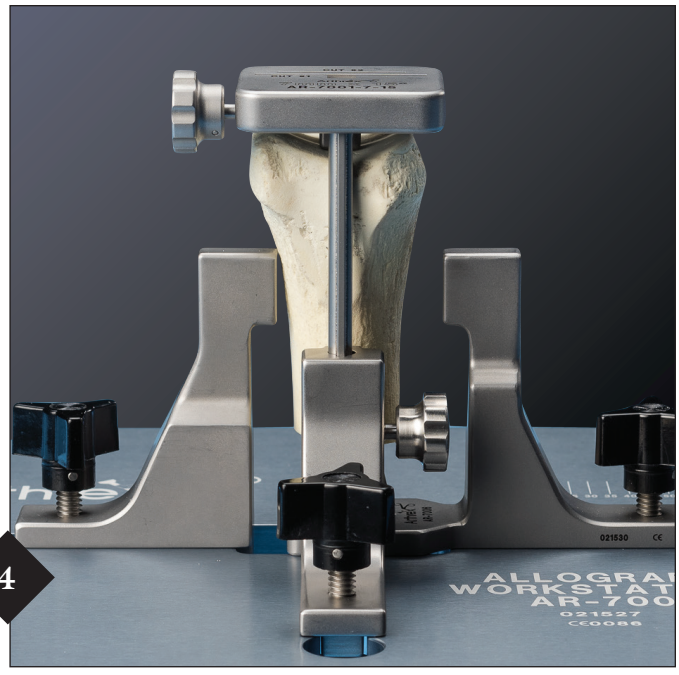
2

Place the holding post (left), graft post (right), and cutting block base assembly (front) on the workstation base.



3

Place the graft on the post. Ensure the height from the articular surface (I) to the base (II) is greater than 8.25 cm.



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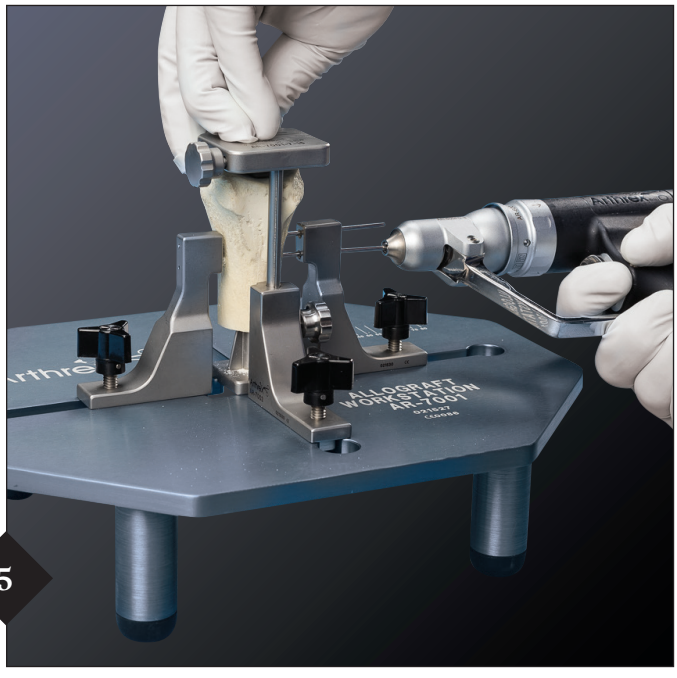
Extend the cutting block post to its maximum height with one of the cutting block assemblies to determine if the graft needs shortening.



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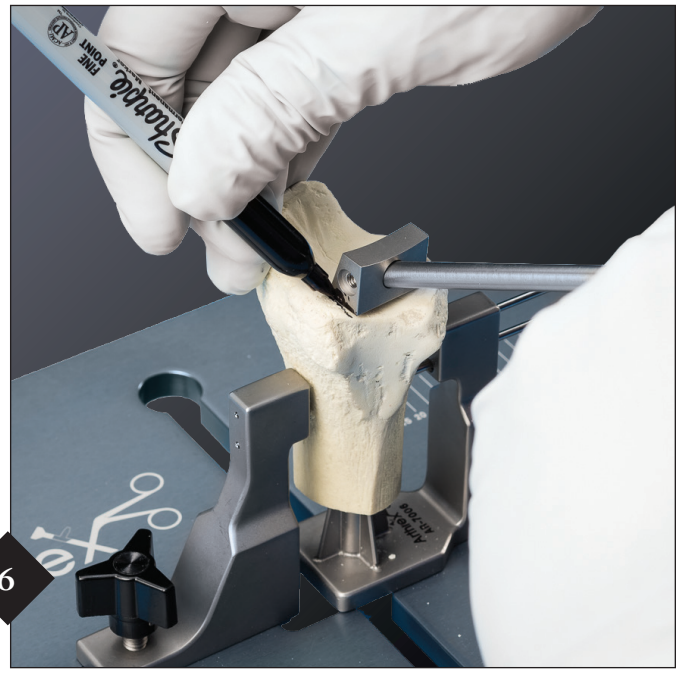
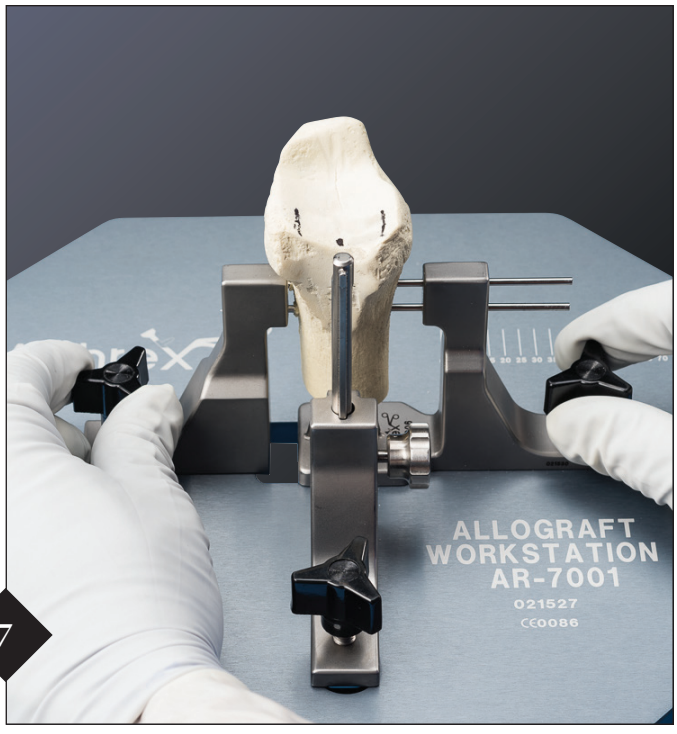
Once the optimal height is ensured, secure the graft by drilling the 2.3 mm (0.090 x 4") stabilization guide wires through the graft post assembly until they bottom out in the far graft post.



6

Using the sizing block to mark the superior and inferior borders of the final graft is helpful in determining the center point of the cutting block post alignment. Mark the center point.



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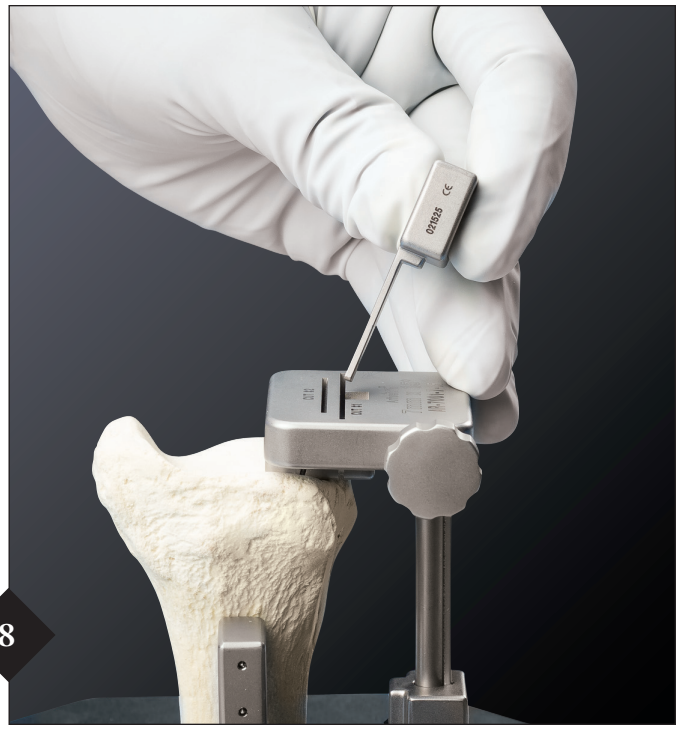
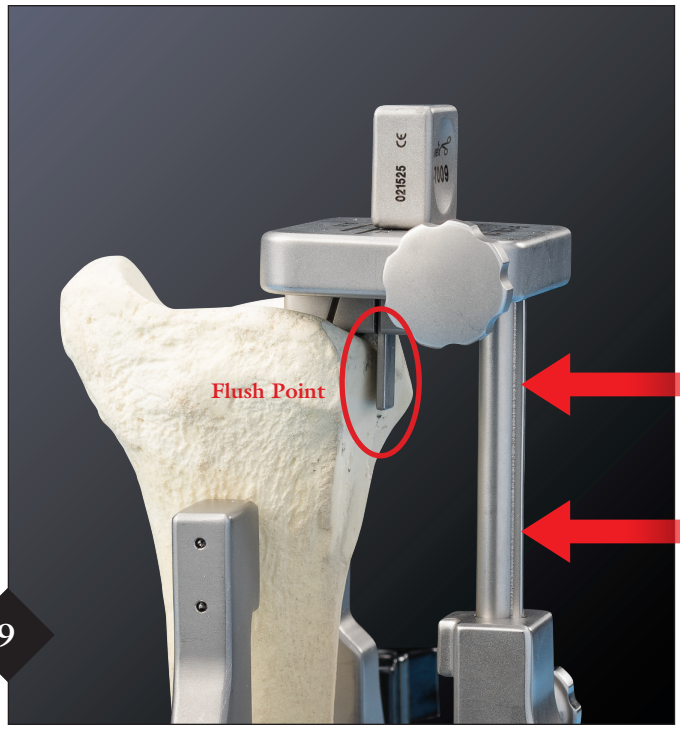
Center the graft at the cutting block post by loosening and tightening the black knobs on the graft and holding post assemblies.



8

Select the first cutting block assembly (cut #1 and #2) to match the desired angle and width from the sizing template previously selected.



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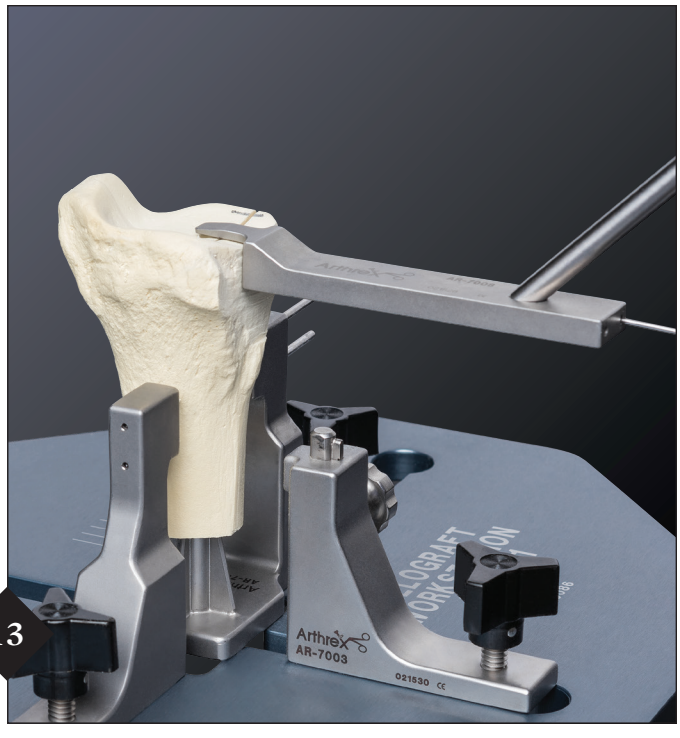
Place the cutter stop (finger guide) into the "cut #1" slot, so that it is seated completely flush on the block. Adjust the cutting block post assembly at the base to ensure the cutter stop is flush against the bone. Then securely tighten it into position.

10

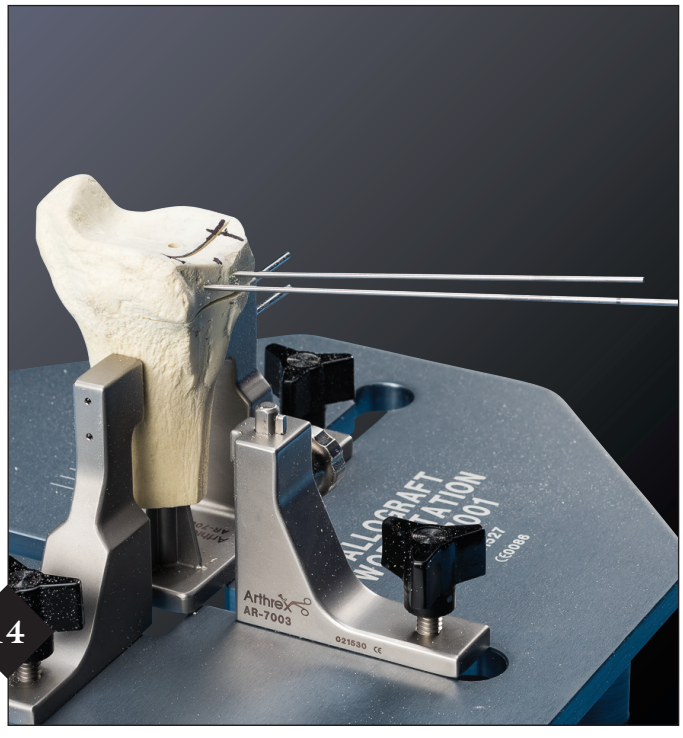
Tighten all knobs as loosening may occur with the vibration of the saw. The cutting guides can accept blades up to 1 mm thick. Make cut #1 to plane the front of the graft (minimal bone is removed). Use saline irrigation to cool the saw blade during the cuts. (AR-300-040S 300 Sagittal Saw Blade, 40 x 14 x 0.6 mm is recommended.)

Confirm that cut #1 has removed the desired amount of bone and is as flat as preferred before committing to cut #2.

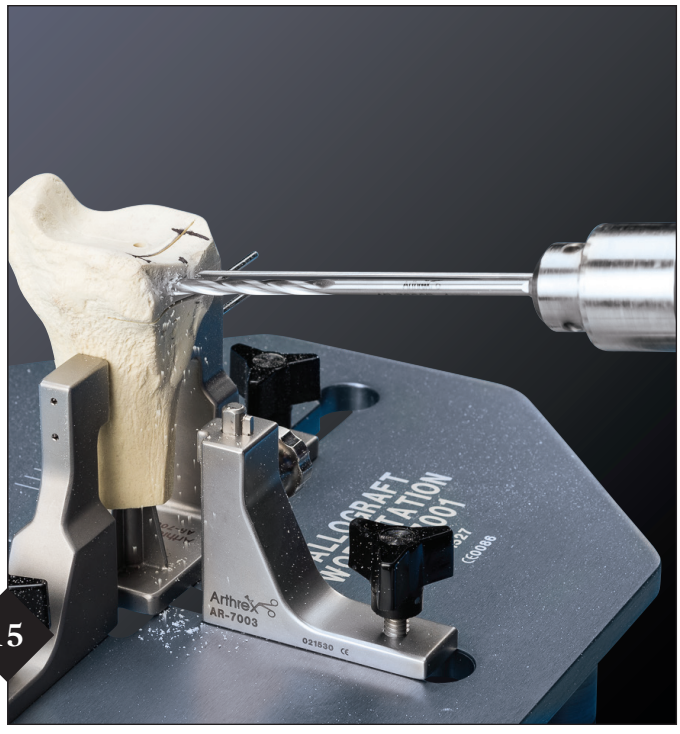
Make angled cut #2. Pay close attention to match the angle of the blade to the angle of the guide. Use bulb saline irrigation to cool the saw blade during the cuts. Remove the cutting block.



Attach the handle to the parallel drill guide without extensions and place it on the center of the graft. Ensure the finger of the parallel drill guide is flush to the articular surface.



Drill the 6” and 7” long 1.6 mm guidewires (from the AR-7000S set) and remove the guide.



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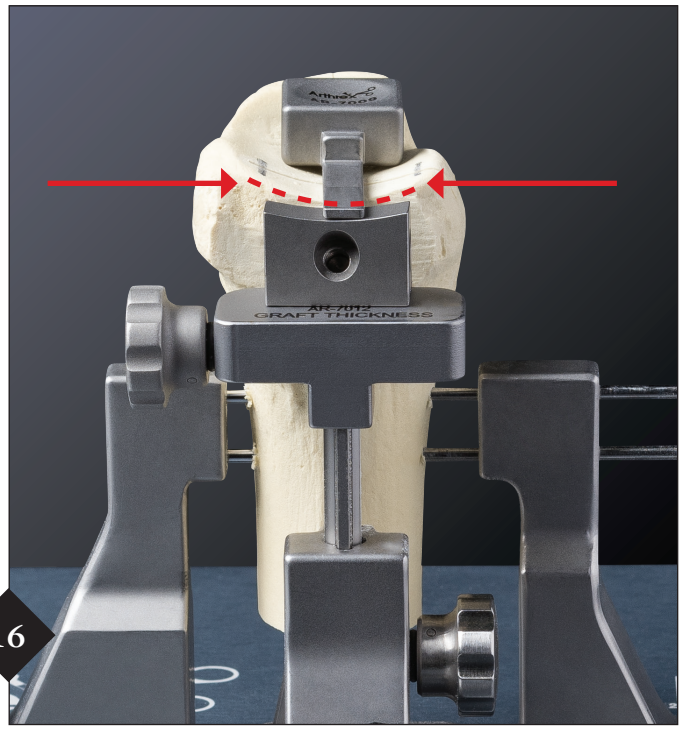
Following the guidewires, use the 4 mm cannulated drill to create 2 pilot holes through the width of the graft. Remove the guidewires.



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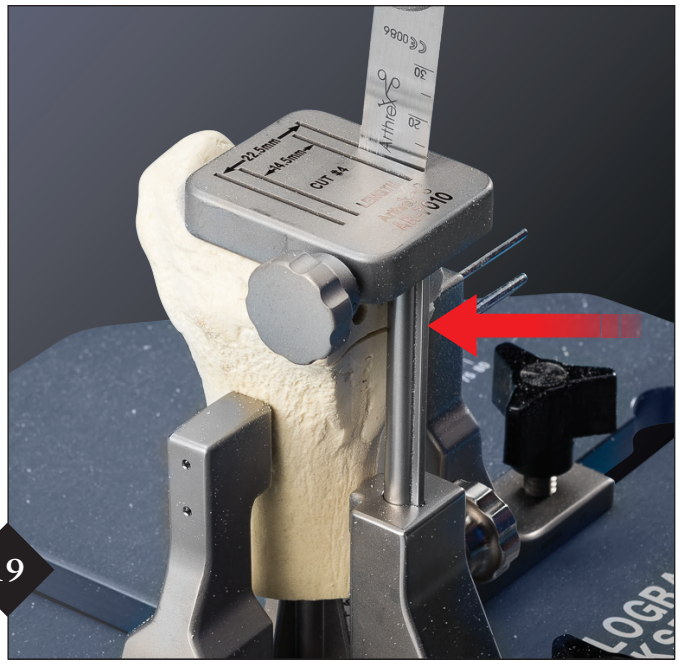
Place cut #3 guide (graft thickness block) on the post and the sizing template on top. Adjust the height so that the surface of the sizing template is leveled with the articular surface (use the cutter stop as shown).

17

Prior to making the cut, ensure the saw blade will not interfere with the drill holes. Lower the cutting block if necessary. Make cut #3 and remove the graft thickness cutting block.

18

Place the length cutter block on the post and adjust until it rests flush on top of the graft.



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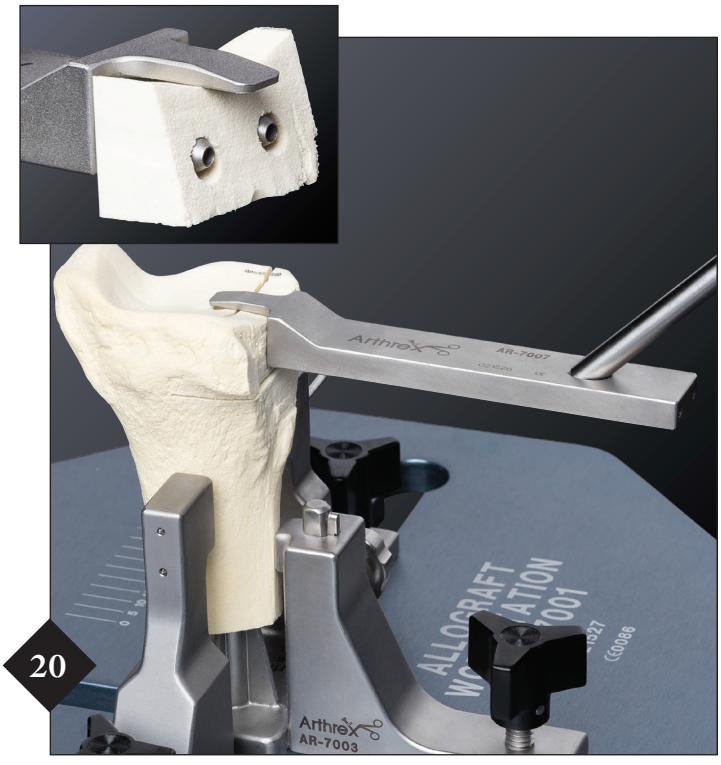
Push the cutting block base assembly forward so that the post sits flush against the graft. *This will help keep the graft in place once freed.* Make cut #4 to the desired length (18 mm, or 23 mm). If a longer graft is desired, you may achieve greater length by shifting the graft post and holding post assembly left or right.



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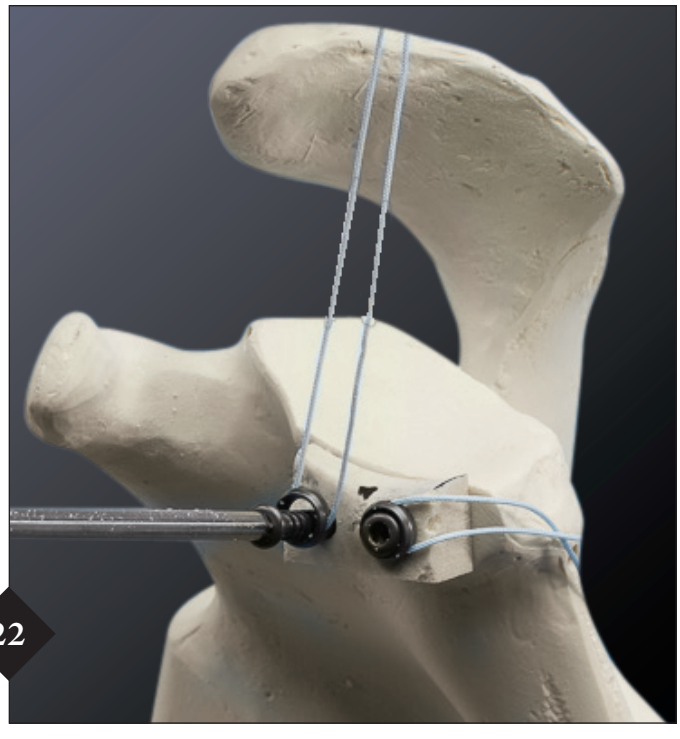
Remove the graft using the parallel drill guide with extensions, which will also be used to position the graft against the glenoid.

21

An optional parallel drill guide is available without a flange/finger, allowing "free" positioning of the graft.



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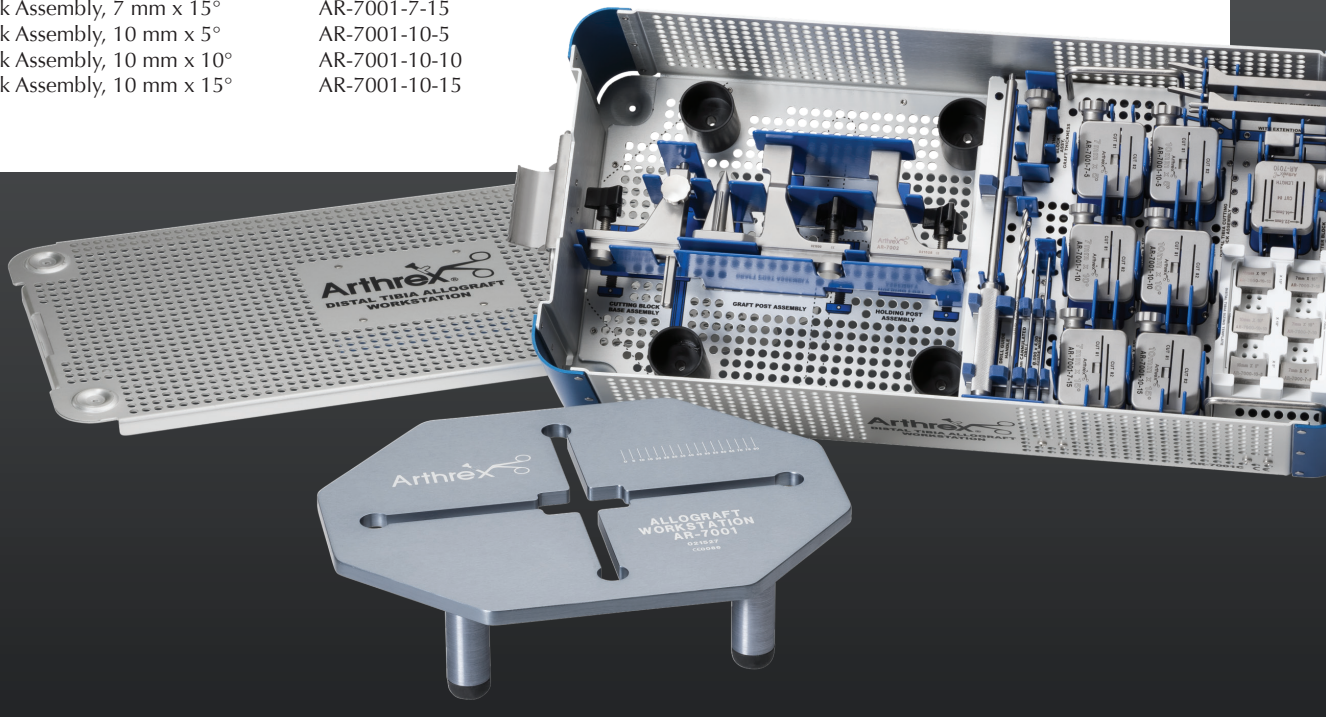
Final intra-articular graft fixation is achieved using 3.75 mm cannulated titanium screws from the Glenoid Bone Loss Set (AR-7000S) and Congruent-Arc Latarjet Surgical Technique (LT1-0556-EN). The capsule and labrum can be reattached using Suture Washers (AR-7000-18T) with #2 FiberWire® suture which allows for repair of the anterior capsule.

Ordering Information

Product Name	Part #
Distal Tibia Allograft Workstation	**AR-7001S**
Distal Tibia Allograft Workstation Case	AR-7001C
Drill Cannulated, 4 mm	AR-7000D
Sizing Template, Distal Tibia, 7 mm x 5°	AR-7000-7-5
Sizing Template, Distal Tibia, 7 mm x 10°	AR-7000-7-10
Sizing Template, Distal Tibia, 7 mm x 15°	AR-7000-7-15
Sizing Template, Distal Tibia, 10 mm x 5°	AR-7000-10-5
Sizing Template, Distal Tibia, 10 mm x 10°	AR-7000-10-10
Sizing Template, Distal Tibia, 10 mm x 15°	AR-7000-10-15
Allograft Workstation	AR-7001
Cutting Block Assembly, 7 mm x 5°	AR-7001-7-5
Cutting Block Assembly, 7 mm x 10°	AR-7001-7-10
Cutting Block Assembly, 7 mm x 15°	AR-7001-7-15
Cutting Block Assembly, 10 mm x 5°	AR-7001-10-5
Cutting Block Assembly, 10 mm x 10°	AR-7001-10-10
Cutting Block Assembly, 10 mm x 15°	AR-7001-10-15

Product Name	Part #
Holding Post Assembly	AR-7002
Cutting Block Base Assembly	AR-7003
Cutting Block Assembly, Graft Thickness	AR-7004
Graft Post Assembly	AR-7006
Parallel Drill Guide Assembly, w/ Extensions	AR-7007
Parallel Drill Guide Assembly, w/o Extensions	AR-7008
Cutter Stop	AR-7009
Cutting Block Assembly, Length	AR-7010
Guide Wire, 0.090 x 4"	AR-7011
Glenoid Drill Guide Handle, Long	AR-9215-1-02



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