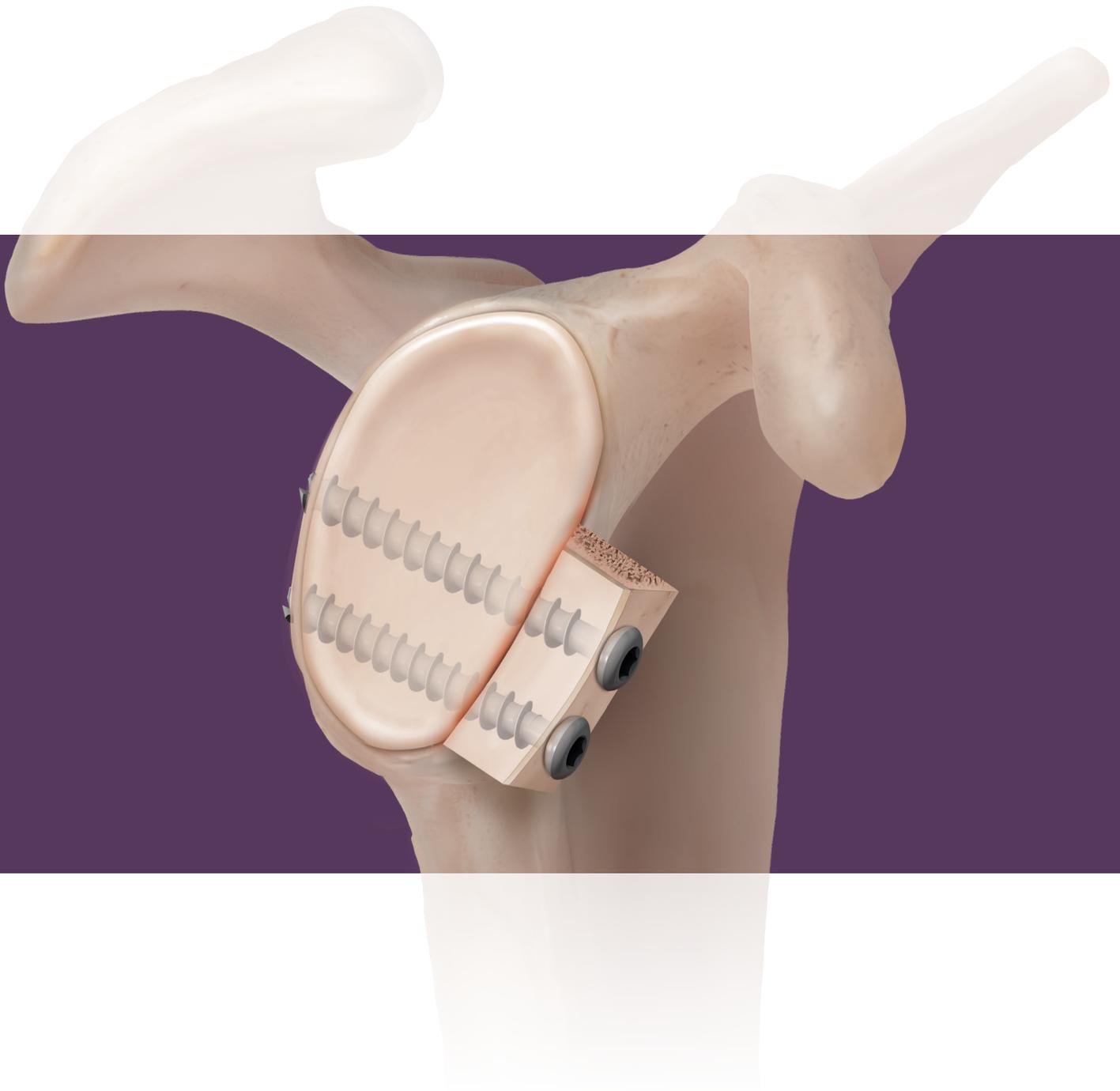


Distal Tibia Allograft Workstation for Glenoid Bone Loss

Surgical Technique



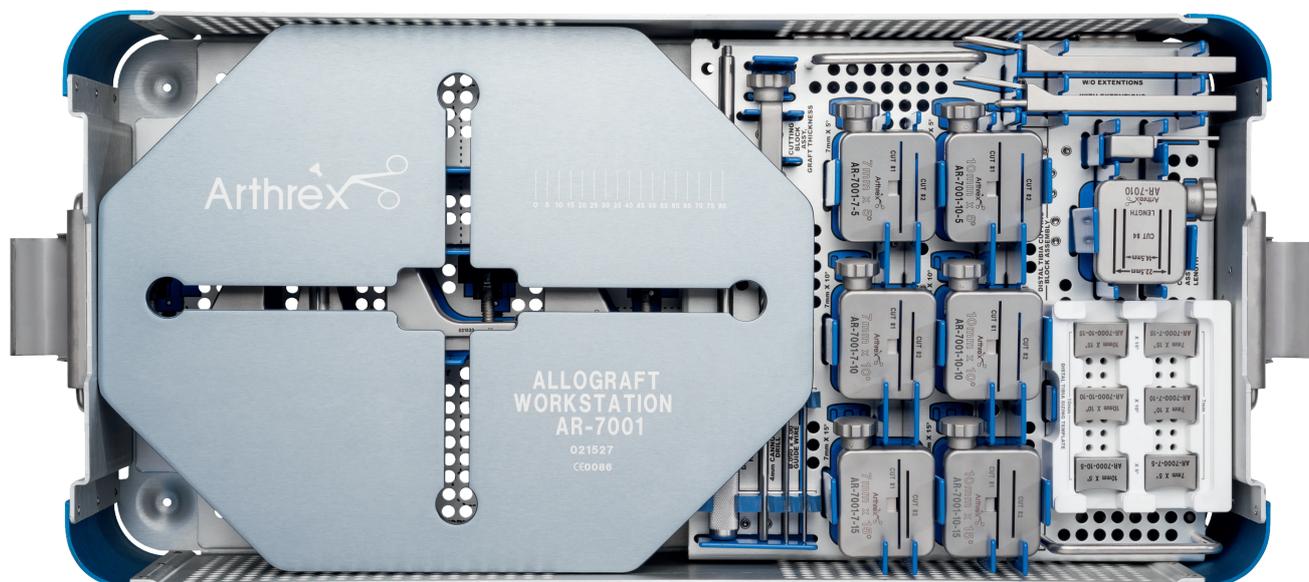
Distal Tibia Allograft Workstation for Glenoid Bone Loss

Introduction

Treatment of shoulder instability caused by bony pathology is complex and challenging. Provencher et al describe a novel technique for the management of glenoid bone deficiency using fresh distal tibia allograft. 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}

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

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





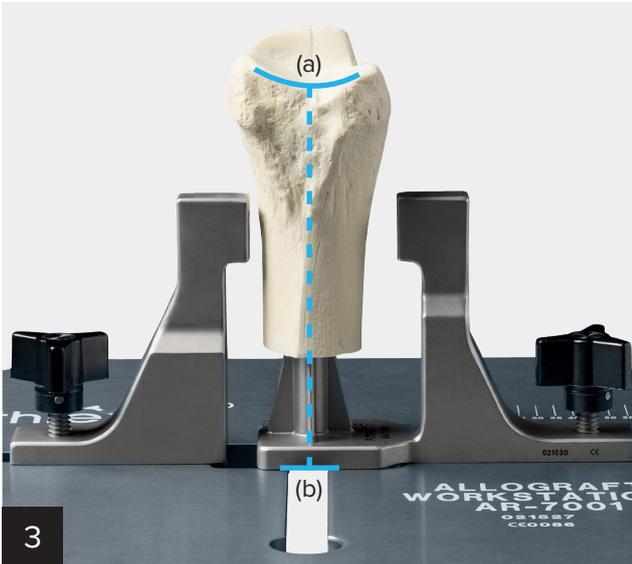
1

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 width (7 mm or 10 mm) of the final graft. The sizing blocks have a fixed length of 22 mm, and the final allograft length (18 mm or 23 mm superior to inferior) can be adjusted during the cutting process.



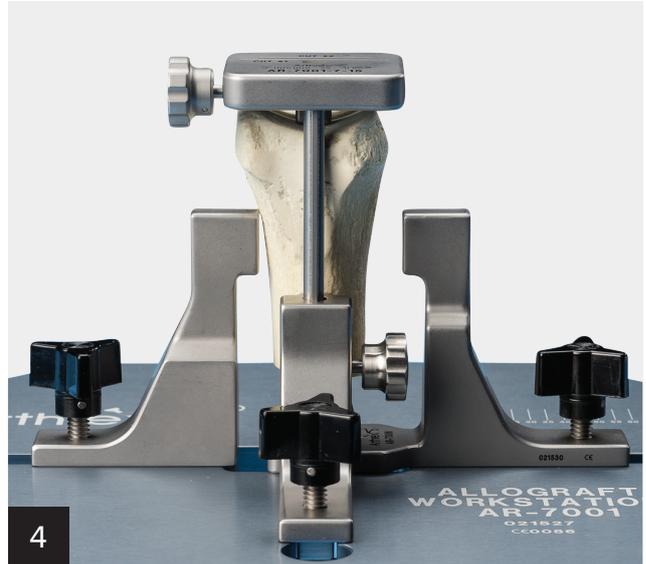
2

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 (a) to the base (b) is greater than 8.25 cm. (This is to ensure the graft does not sit too low causing cut #3 to intersect with the stabilization pins. The graft can be manually raised and secured with the stabilization pins if this height is less than 8.25 cm.)



4

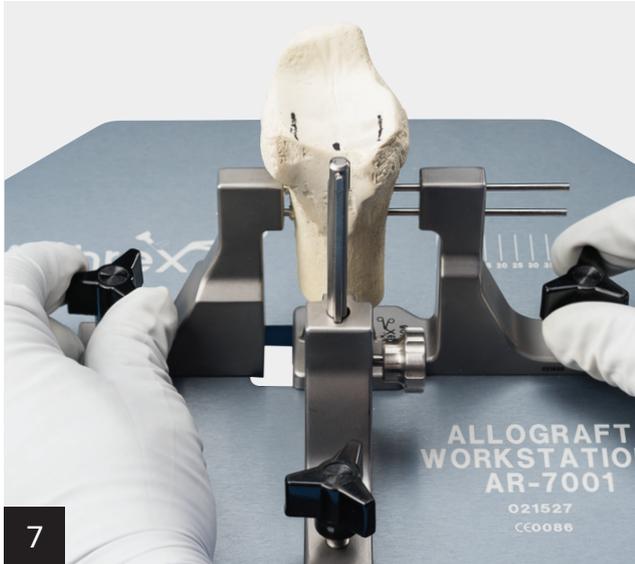
Extend the cutting block post to its maximum height with one of the cutting block assemblies to determine if the graft needs shortening.



5 Once the optimal height is determined, secure the graft by drilling the 2.3-mm (0.090 in × 4 in) stabilization guidewires through the graft post assembly until they bottom out in the far graft post.



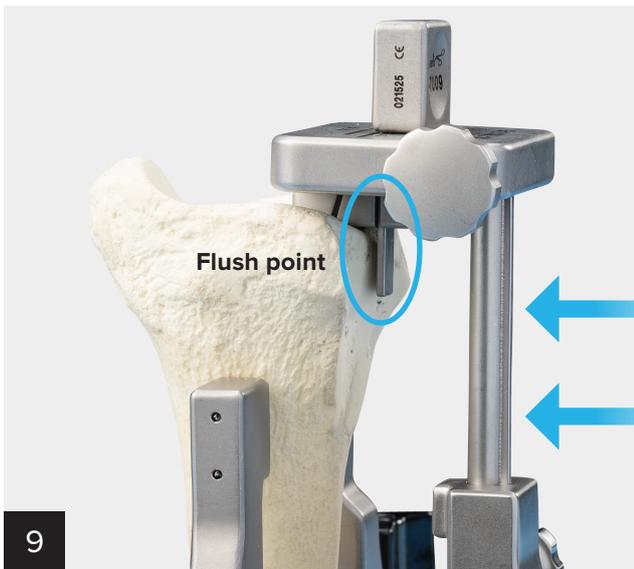
6 Using the sizing block to mark the superior and inferior borders of the final graft is helpful in determining the center point of the cutting block post alignment. Mark the center point.



7 Center the graft at the cutting block post by loosening the black knobs and shifting the graft post and holding the post assembly left or right as needed. Retighten the black knobs.



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

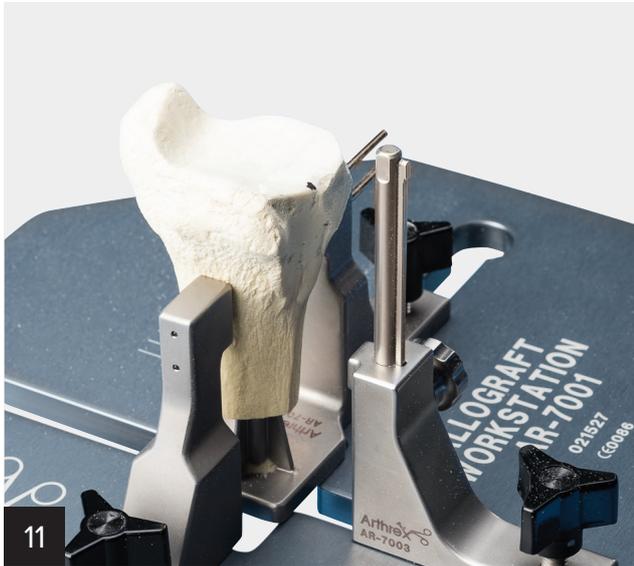


9 Place the cutter stop (finger guide) into the “cut #1” slot so that it is seated completely flush on the block. Adjust the cutting block post assembly at the base to ensure the cutter stop is flush against the bone. Then securely tighten the black knob.



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.

Note: The 300 Sagittal Saw Blade, 40 mm × 14 mm × 0.6 mm (AR-300-040S 300) is recommended.



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

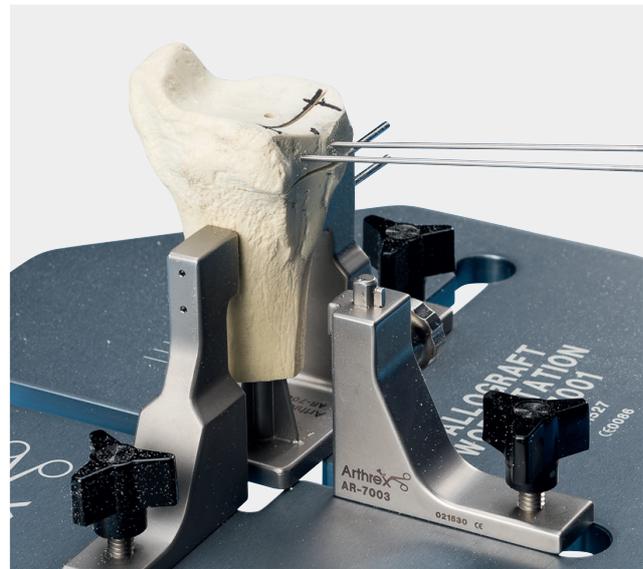


12 Make angled cut #2. Pay close attention to match the angle of the blade to the angle of the guide. Use bulb saline irrigation to cool the saw blade during the cuts. Remove the cutting block.

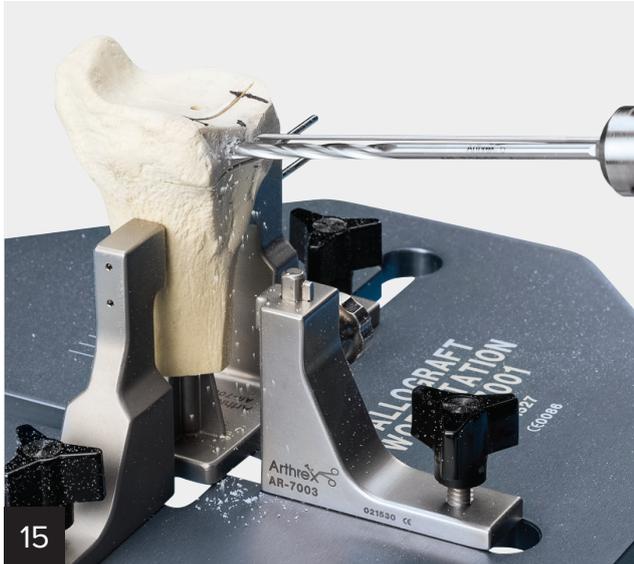


13

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.

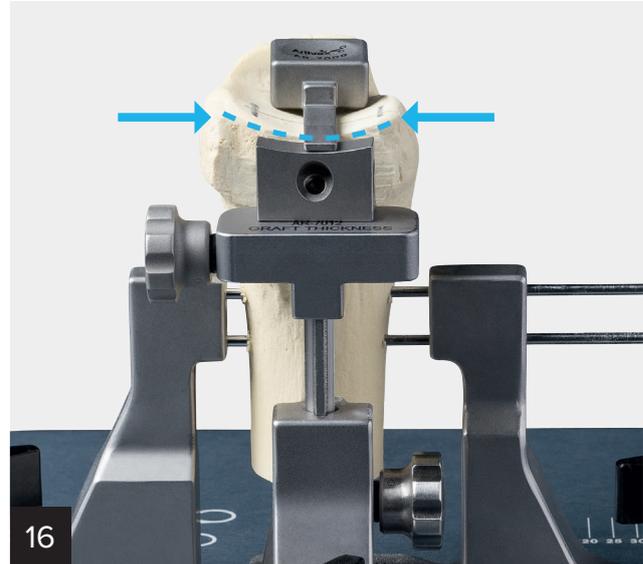


Drill the 6-in and 7-in long 1.6 mm guidewires (from the AR-7000S set) and remove the guide.



15

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



16

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).

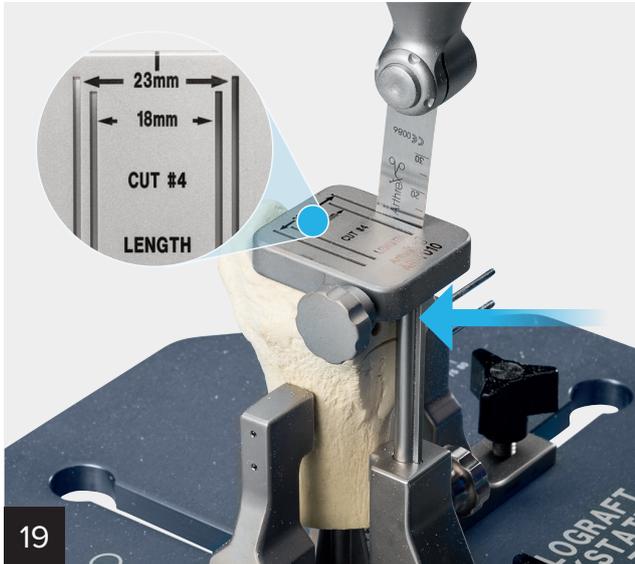


Prior to making the cut, ensure the saw blade will not interfere with the drill holes. Lower the cutting block if necessary. Make cut #3 and remove the graft thickness cutting block.

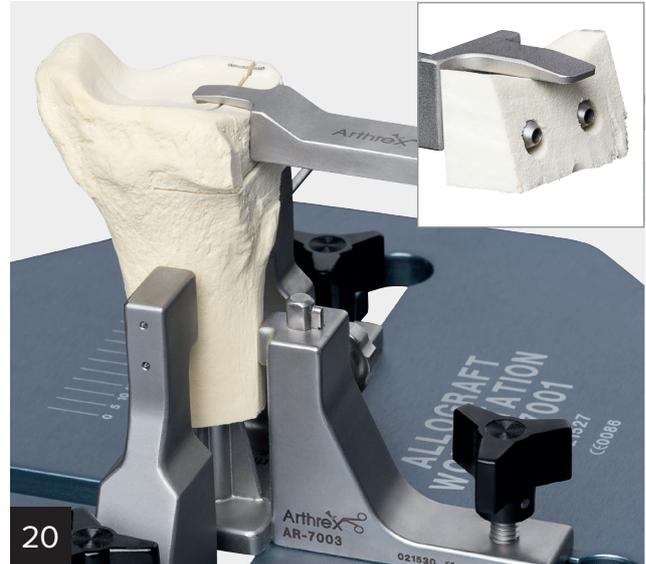


Place the length cutter block on the post and adjust until it rests flush on top of the graft.

Important: Ensure that the length cutter block's center point laser mark aligns with the center point of the allograft; adjust the graft to the left or right if needed.



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.



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.



22 Achieve final intra-articular graft fixation using 3.75-mm cannulated titanium screws from the Glenoid Bone Loss Set (AR-7000S) and following the steps in the 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 Description | Item Number |
|---|----------------------|
| Distal Tibia Allograft Workstation | AR-7001S |
| Distal Tibia Allograft Workstation Case | AR-7001C |
| Cannulated Drill, 4 mm | AR-7000D |
| Sizing Template, distal tibia, 7 mm × 5° | AR-7000-7-5 |
| Sizing Template, distal tibia, 7 mm × 10° | AR-7000-7-10 |
| Sizing Template, distal tibia, 7 mm × 15° | AR-7000-7-15 |
| Sizing Template, distal tibia, 10 mm × 5° | AR-7000-10-5 |
| Sizing Template, distal tibia, 10 mm × 10° | AR-7000-10-10 |
| Sizing Template, distal tibia, 10 mm × 15° | AR-7000-10-15 |
| Allograft Workstation | AR-7001 |
| Cutting Block Assembly, 7 mm × 5° | AR-7001-7-5 |
| Cutting Block Assembly, 7 mm × 10° | AR-7001-7-10 |
| Cutting Block Assembly, 7 mm × 15° | AR-7001-7-15 |
| Cutting Block Assembly, 10 mm × 5° | AR-7001-10-5 |
| Cutting Block Assembly, 10 mm × 10° | AR-7001-10-10 |
| Cutting Block Assembly, 10 mm × 15° | AR-7001-10-15 |
| 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 |
| Guidewire, 0.090 in × 4 in | AR-7011 |
| Glenoid Drill Guide Handle, long | AR-9215-1-02 |

Please note that not all products advertised in this brochure/surgical technique guide may be available in all countries. Please ask Arthrex Customer Service or your local Arthrex Representative before ordering if the desired product is available for delivery.

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



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.

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