Univers VaultLock® and Keeled Glenoids

Surgical Technique

Arthrex®

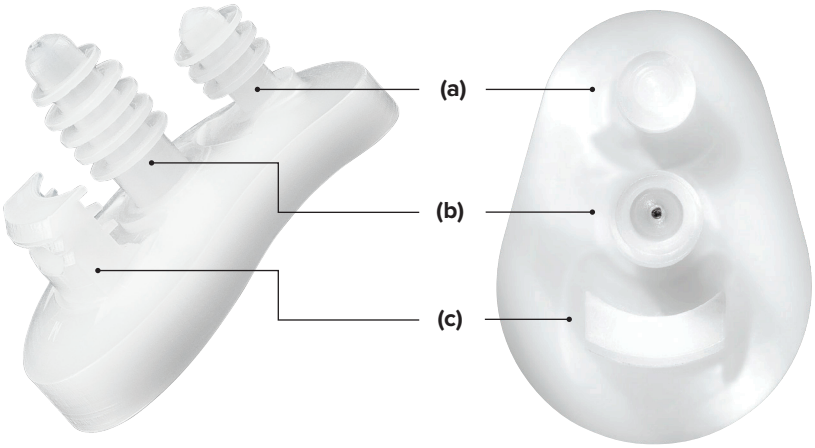
Univers VaultLock® Glenoid System

Superior Peg (a)
- Enhanced immediate fixation
- Self-pressurizing design

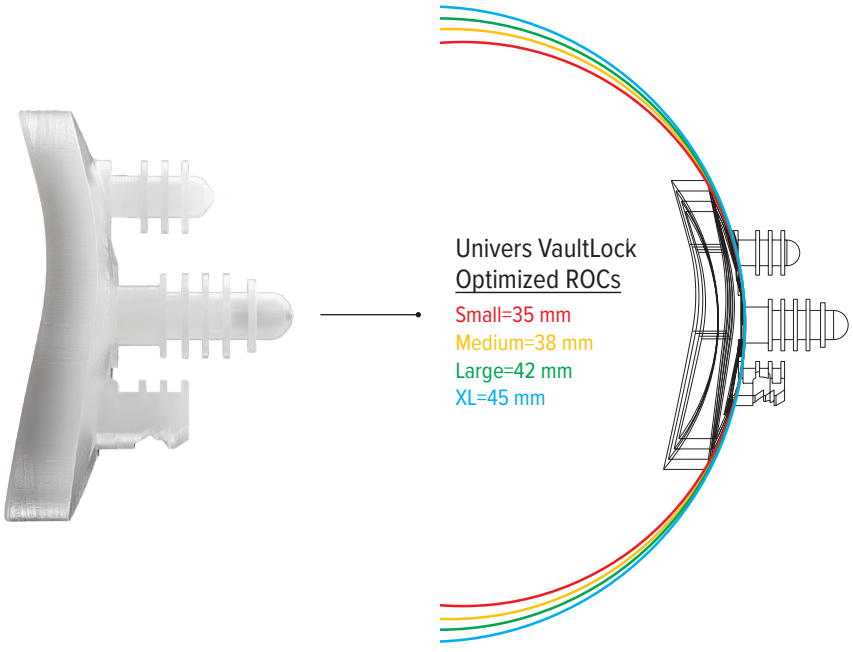
Fluted Central Peg (b)
- Immediate fixation

Inferior Keel (c)
- Decreased cortical penetration compared to inferior pegs
- Multiple fixation features, including reverse barbs, flutes, and central cement fenestration

Inline Configuration
- Combines all advantages of pegged and keeled implants including stability and ease of preparation



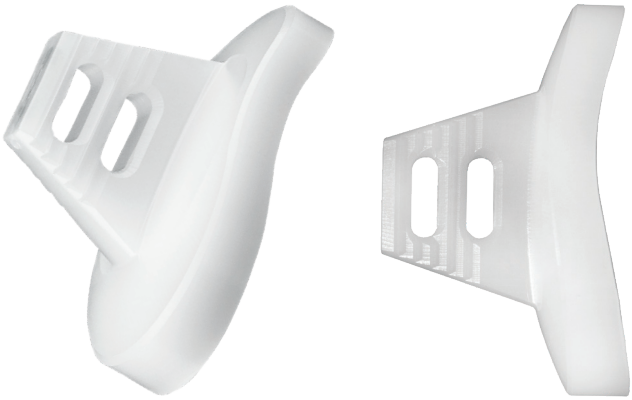
Anatomic Backside Radius of Curvature (ROC)
- Matches glenoid poly to glenoid anatomy
- Bone-sparing reaming
- Simplified decision-making
- Anatomic solution with subchondral, bone-preserving design



Keeled Glenoid System

Keeled Glenoid

- Dual fenestrations for enhanced anchoring
- Reverse barbs for expansion effect within the glenoid vault



Univers VaultLock® Glenoid System Surgical Technique

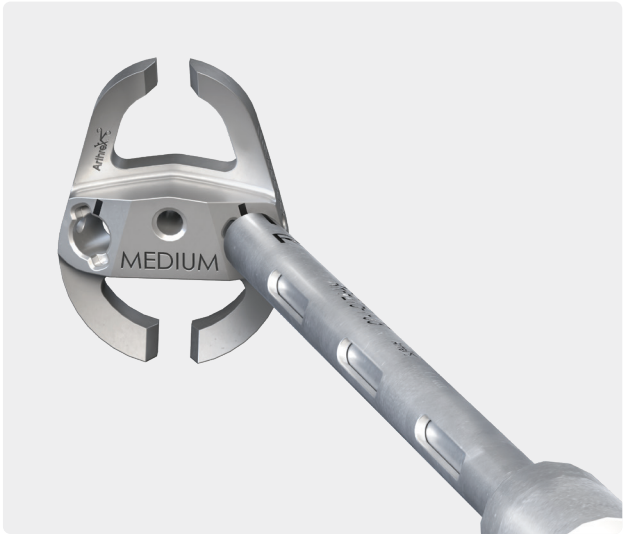
The Univers VaultLock glenoid system is a low-profile, cannulated reaming system consisting of reamers, guides, and trials with variable backside radii of curvatures to match the implant size of choice.

> **Note:** If using the Virtual Implant Positioning™ (VIP™) glenoid targeter and VIP glenoid reamer, the techniques in each system's surgical technique guide (LT1-000040-en-US and LT1-000246-en-US, respectively) can be followed instead of steps 1-3 that follow.

1a

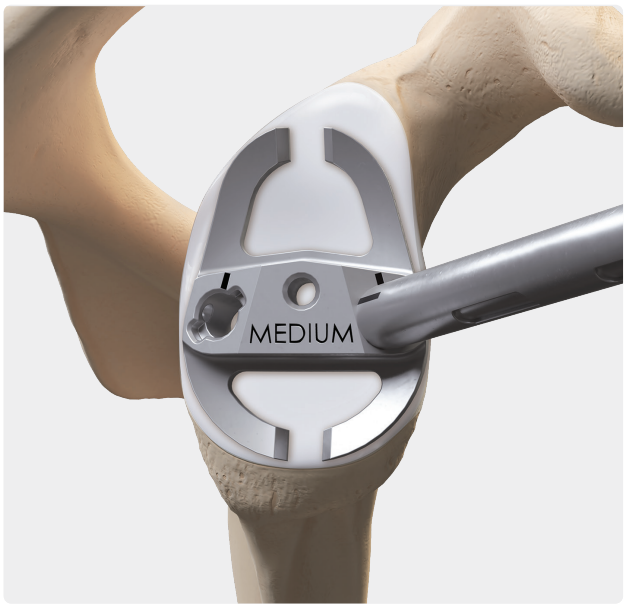
Obtain complete exposure of the glenoid articular surface. Assemble the glenoid guide handle to the pin guide (S, M, L, XL) that best matches the glenoid surface area.

Align the black laser marking on the quick-connect handle with the black laser marking on the glenoid pin guide.



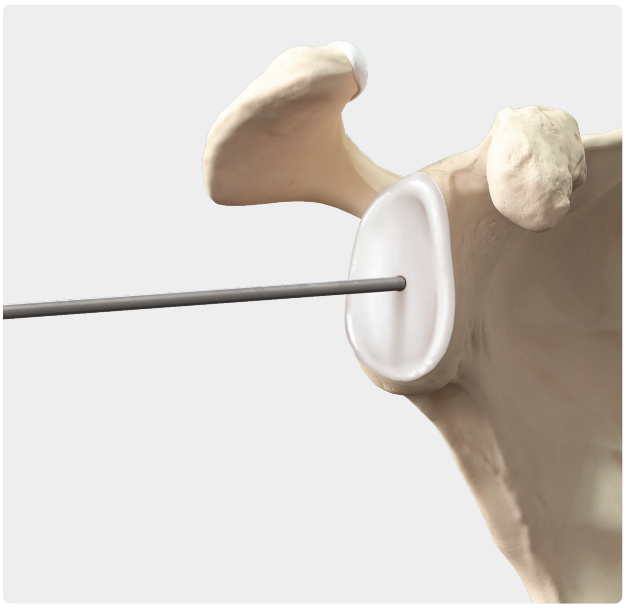
1b

Rotate the handle a quarter turn to the right to snap the handle and pin guide together.



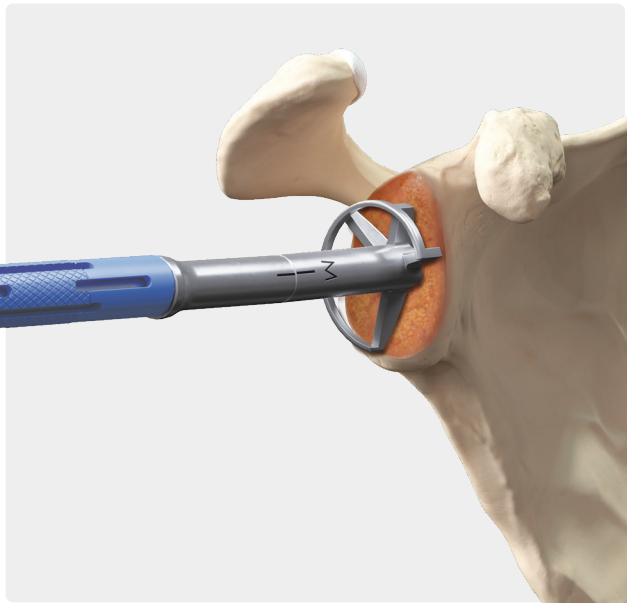
1c

Place the guide into the desired positioning on the glenoid face and drive the pin until it reaches the medial vault cortical bone.



2

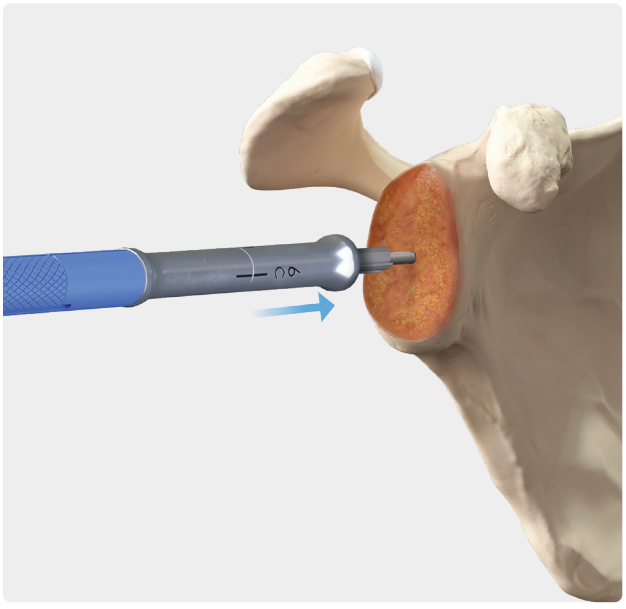
Remove the guide and verify central glenoid pin placement as well as appropriate pin version and inclination.



3

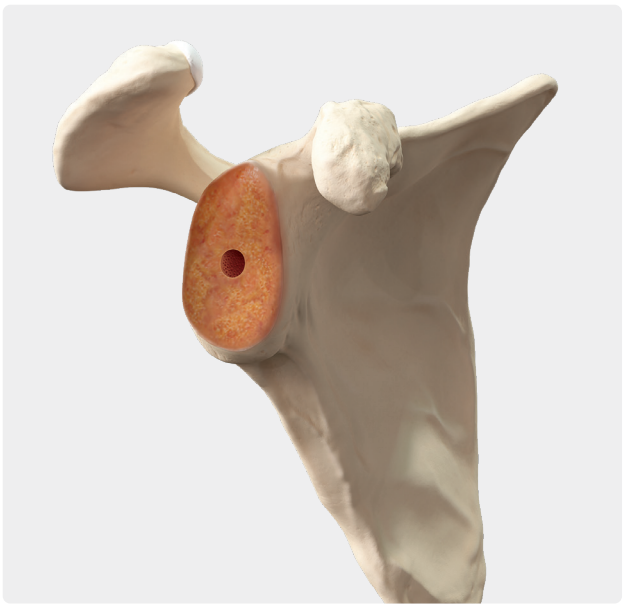
Select the Univers VaultLock® reamer size matching the pin guide used in the previous step. Place the cannulated reamer over the guide pin. Carefully ream the glenoid surface to remove any remaining cartilage and the minimum amount of subchondral bone necessary to conform to the surface geometry of the final glenoid component.

> **Note:** Initiate reaming before contacting the glenoid surface.



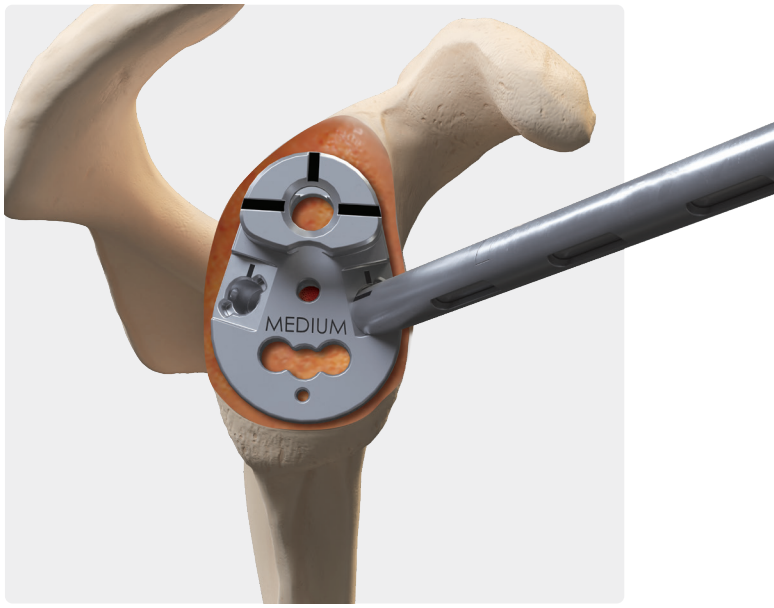
4

Prepare the central peg hole by placing the 6 mm drill over the guide pin. Advance the drill until the positive stop reaches the glenoid surface, taking care to maintain alignment of the pin to the trajectory of the drill.



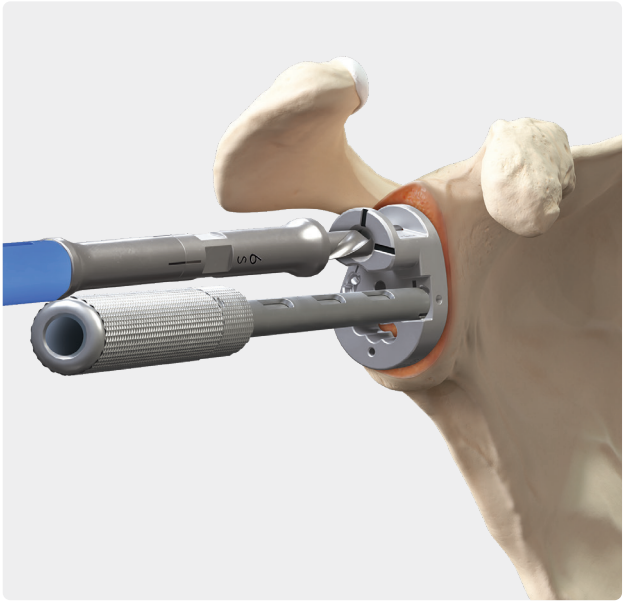
5

Remove the guide pin.



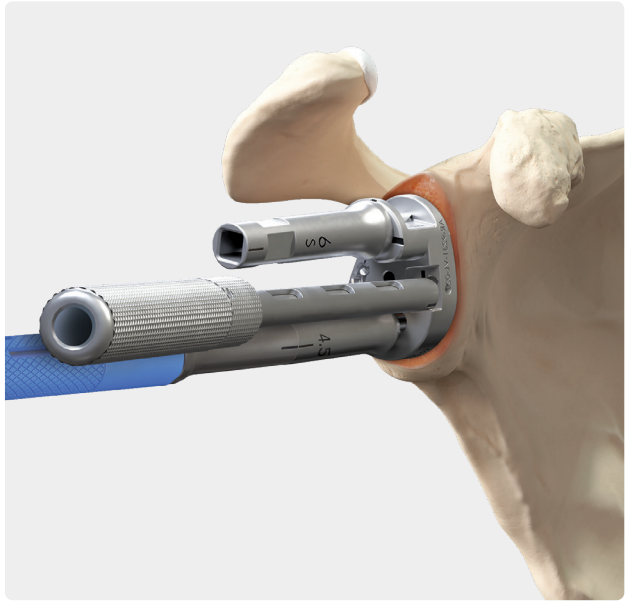
6

Select the Univers VaultLock™ drill guide size matching the pin guide used in step 1 and assemble in the same fashion. Move the VaultLock drill guide into position by engaging the peg into the previously drilled central peg hole in the glenoid.



7

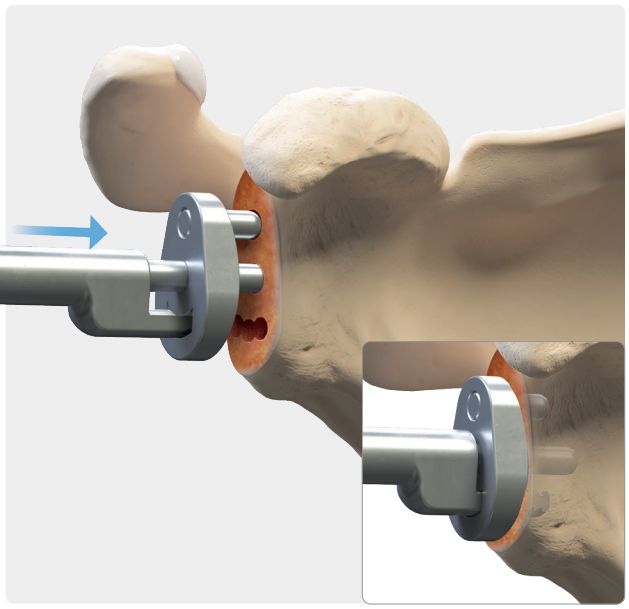
Position the 6 mm noncannulated drill into the reamer quick-connect adapter and drill the superior glenoid hole. Detach the drill and keep it in place to hold the guide orientation.



8

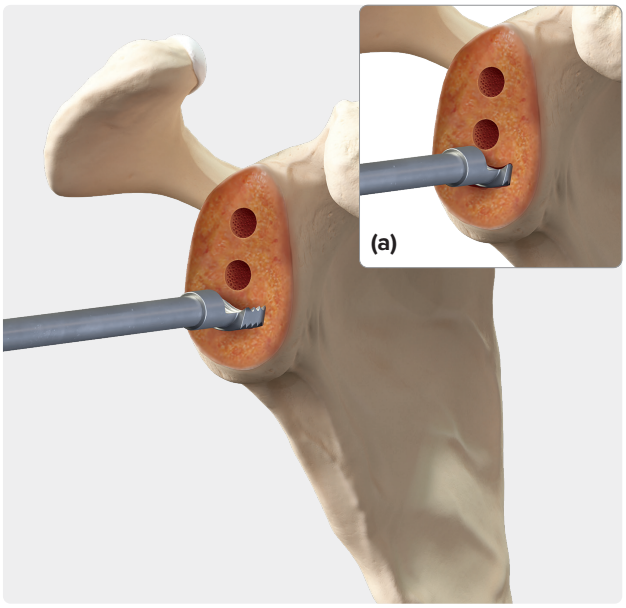
Use the 4.5 mm quick-release drill to prepare the 3 inferior holes. Remove the guide.

> **Note:** Insert the drill into the guide before activation. There is a mechanical stop on the drill for depth control.



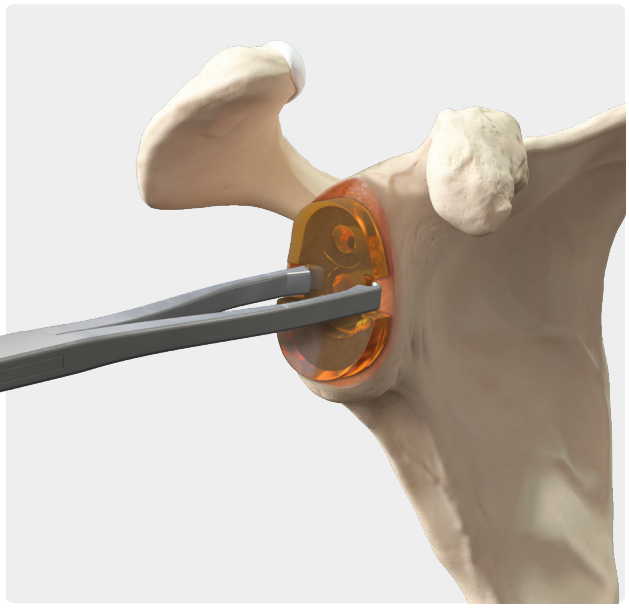
9

Engage the pegs on the glenoid broach into the previously drilled holes. Use a mallet to advance the glenoid broach into the roughly prepared slot.



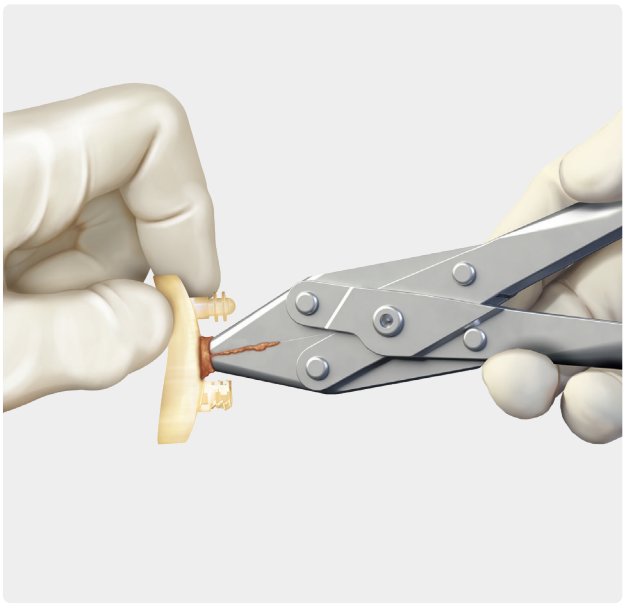
10

Optional: Alternatively, use the pegged glenoid punch to prepare the keel slot in place of the glenoid broach. Advance the punch until the shoulder of the punch is flush with the bone surface **(a)**.



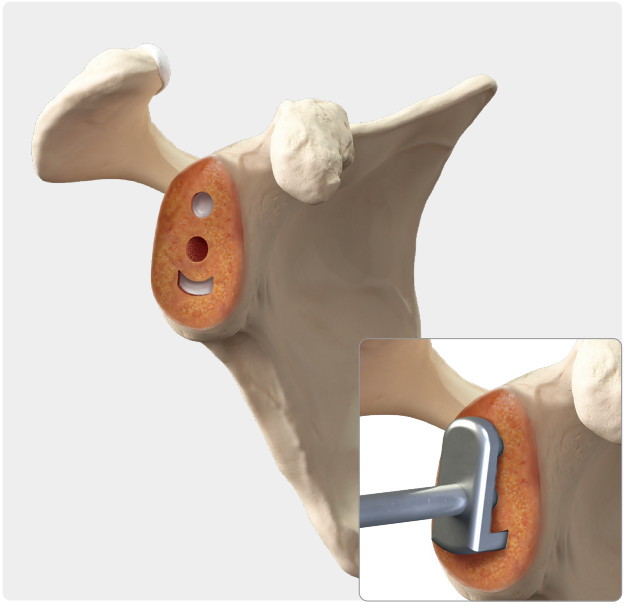
11

Insert the Univers VaultLock® glenoid trial by hand or with the glenoid trial forceps. Verify the trial is fully seated to ensure proper fit of the actual glenoid implant.



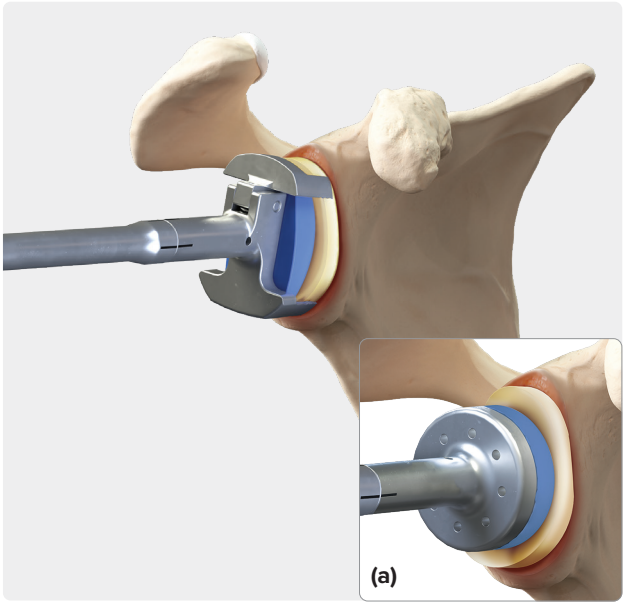
12

Prior to cementing the glenoid, use the graft compression tool to place the graft around the central peg of the implant. The graft can be obtained from the humeral head or from the reamers and drills after preparing the glenoid. Place the graft into the compression tool then clamp the tool onto the central peg and twist the implant 180˚. Repeat the process so the graft fully covers the central peg.



13

Pack the keel slot and superior peg hole with cement using a syringe or finger. Use the cement pressurizer to impact cement into the keel slot and peg holes and to create good cement interdigitation within the glenoid vault. Alternate between cementing and pressurization until a sufficient quantity of cement has filled the glenoid vault. Prior to step 14, the superior hole and inferior keel slot should be filled again with cement.



14

Introduce the implant with the glenoid inserter/impactor (as shown) or by hand. Once the central fluted peg is initially fixed into the prepared hole, push and impact it into the cement-filled glenoid vault. Remove excess cement and verify complete seating of the implant. Firmly hold the glenoid component in place until the cement has cured.

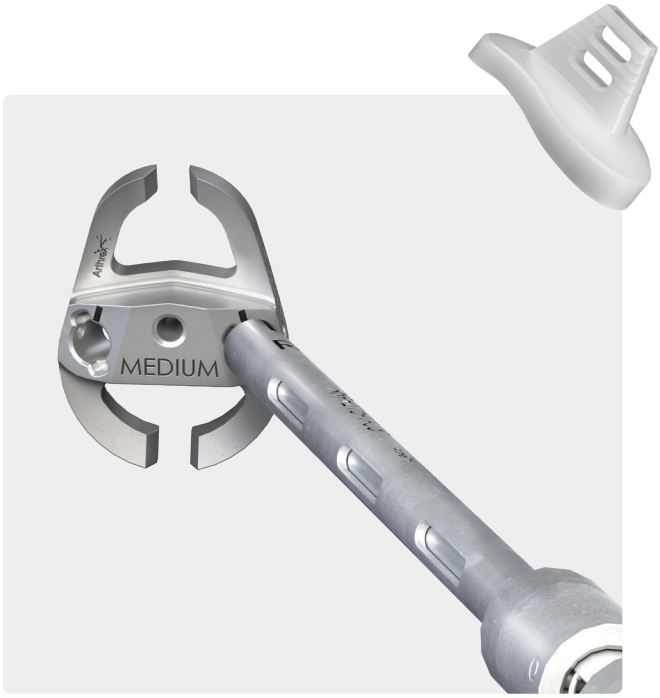
Optional: Secondary impactor can be used **(a)**.

Keeled Glenoid Surgical Technique

1a

Obtain complete exposure of the glenoid articular surface. Assemble the glenoid guide handle to the pin guide (S, M, L, XL) that best matches the glenoid surface area.

Align the black laser marking on the quick-connect handle with the black laser marking on the glenoid pin guide.

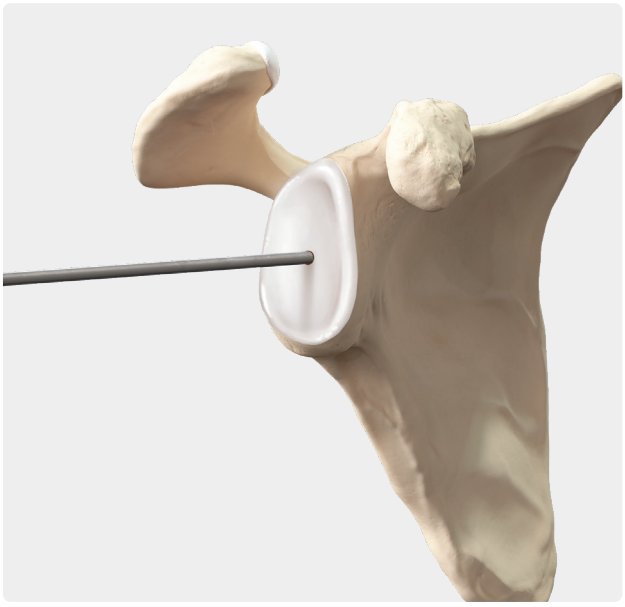


1b

Rotate the handle a quarter turn to the right to snap the handle and pin guide together.

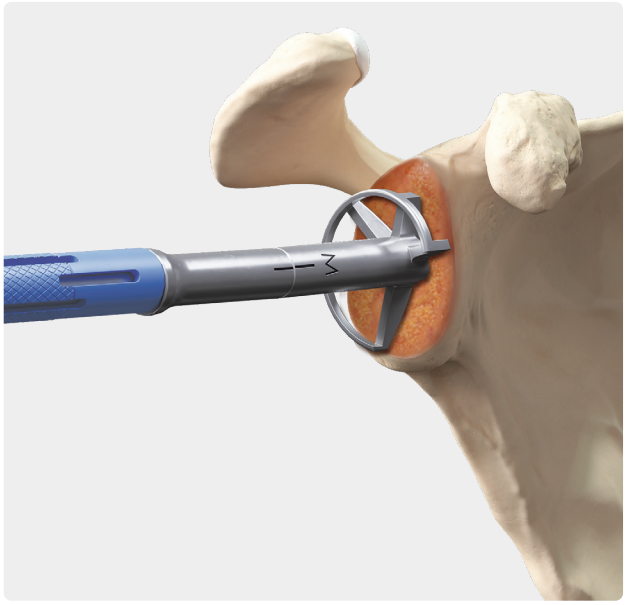
1c

Place the guide into the desired positioning on the glenoid face and drive the pin until it reaches the medial vault cortical bone.



2

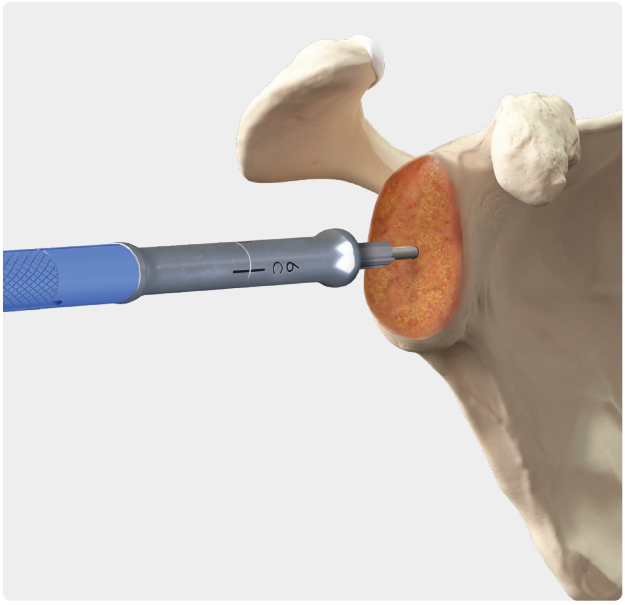
Remove the guide and verify the central glenoid pin placement as well as the appropriate pin version and inclination.



3

Select the reamer size matching the guide used in the previous step. Place the Nautilus cannulated reamer over the guide pin. Carefully ream the glenoid surface to remove any remaining cartilage and the minimum amount of subchondral bone necessary to conform to the surface geometry of the final glenoid component.

> **Note:** Inititate reaming before contacting the glenoid surface.

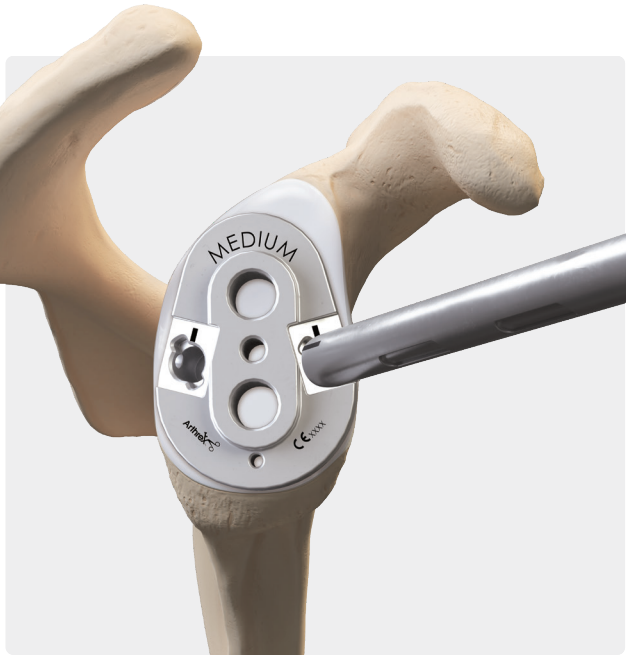


4

Begin preparing the keel hole by placing the 6 mm drill over the guide pin. Advance the drill until the positive stop reaches the glenoid surface, taking care to maintain alignment of the pin to the trajectory of the drill.

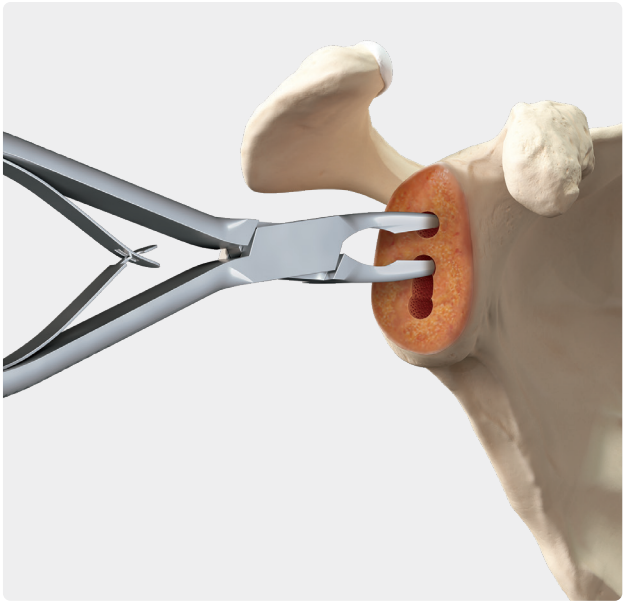
5

Remove the pin.



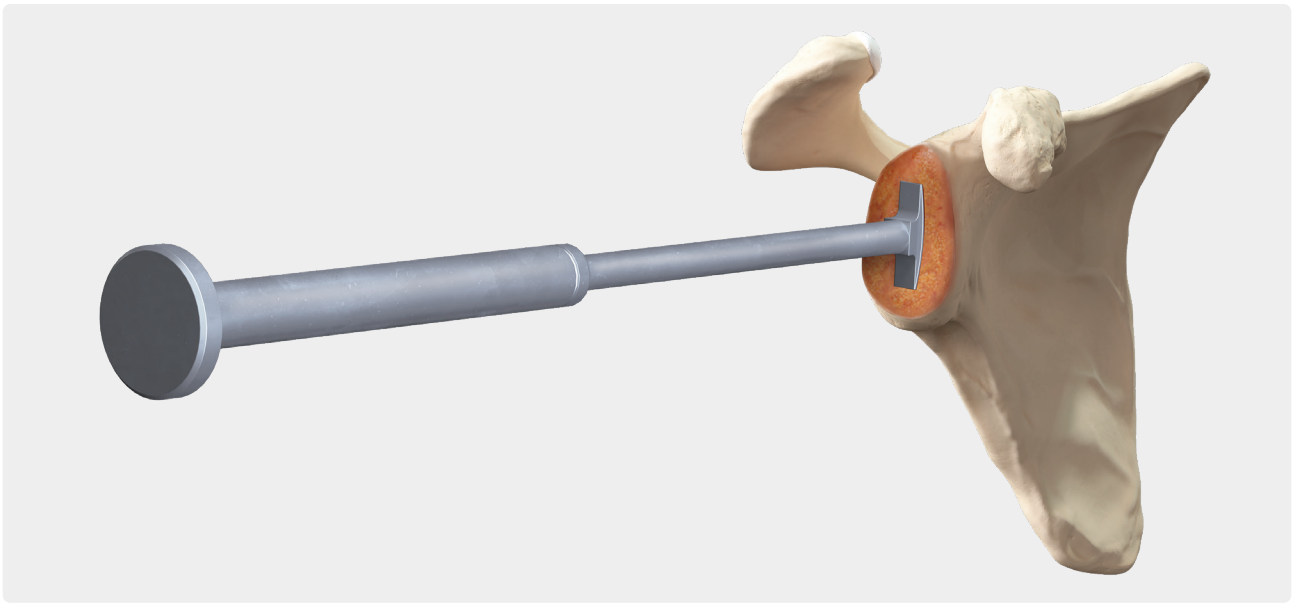
6

Select the small, medium, large, or extra large keel glenoid drill guide (with 2 holes and peg) and connect the quick-connect handle in the same fashion as the pin guide. The handle is oriented 65° to the face of the glenoid, matching the normal anatomic slope of the anterior glenoid neck. Engage the peg on the back of the guide into the previously drilled peg hole. Use the noncannulated 6 mm drill to drill through both holes in the guide.



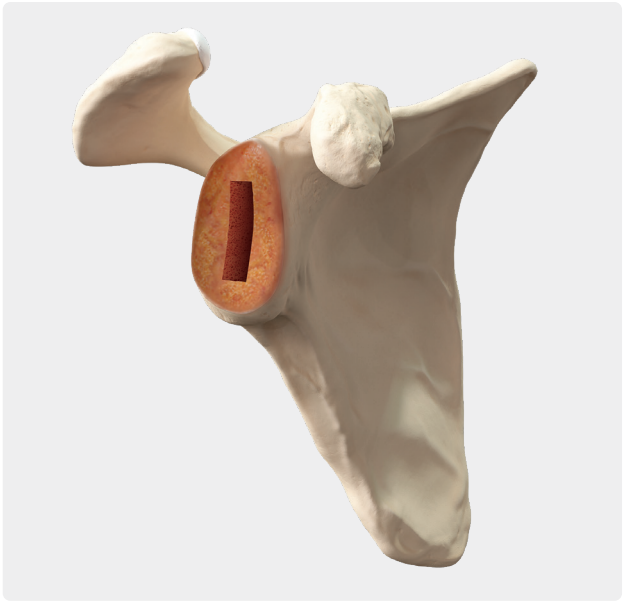
7

Use a small rongeur to remove the bone bridge between the 3 drill holes, resulting in a roughly prepared glenoid slot.



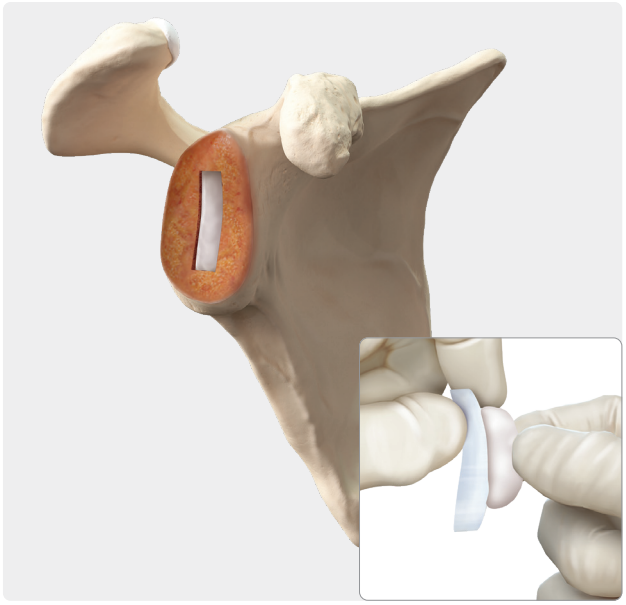
8

Use the glenoid punch to make the final preparation for the keel of the glenoid implant. Position the punch perpendicular to the glenoid surface. Use a mallet to advance the punch into the roughly prepared slot. The punch should be advanced until it is flush with the bone surface.



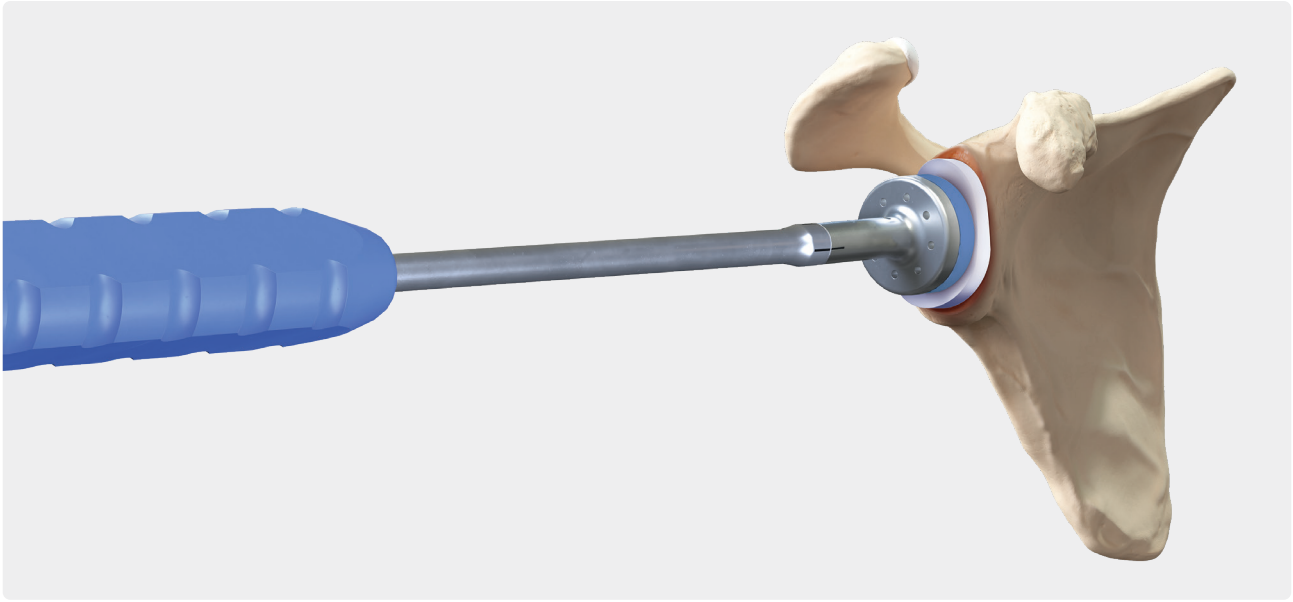
9

After preparing the glenoid for the keeled glenoid implant, perform meticulous irrigation and suctioning to remove bone and soft-tissue debris from the area. If desired, use a keeled glenoid trial to evaluate component stability. Hemostasis should be achieved prior to proceeding with cemented glenoid placement.



10

Open the appropriate glenoid size and press bone cement into the fenestrations on the implant keel. Insert cement into the glenoid slot and pressurize with the glenoid punch. Alternate cementing and pressurization until a sufficient quantity of cement has filled the glenoid vault. Prior to step 11, the slot should be filled again with cement.



11

Push and impact the keel of the implant into the cemented glenoid vault. Excess cement should be removed. Firmly hold the glenoid component in place until the cement has cured.

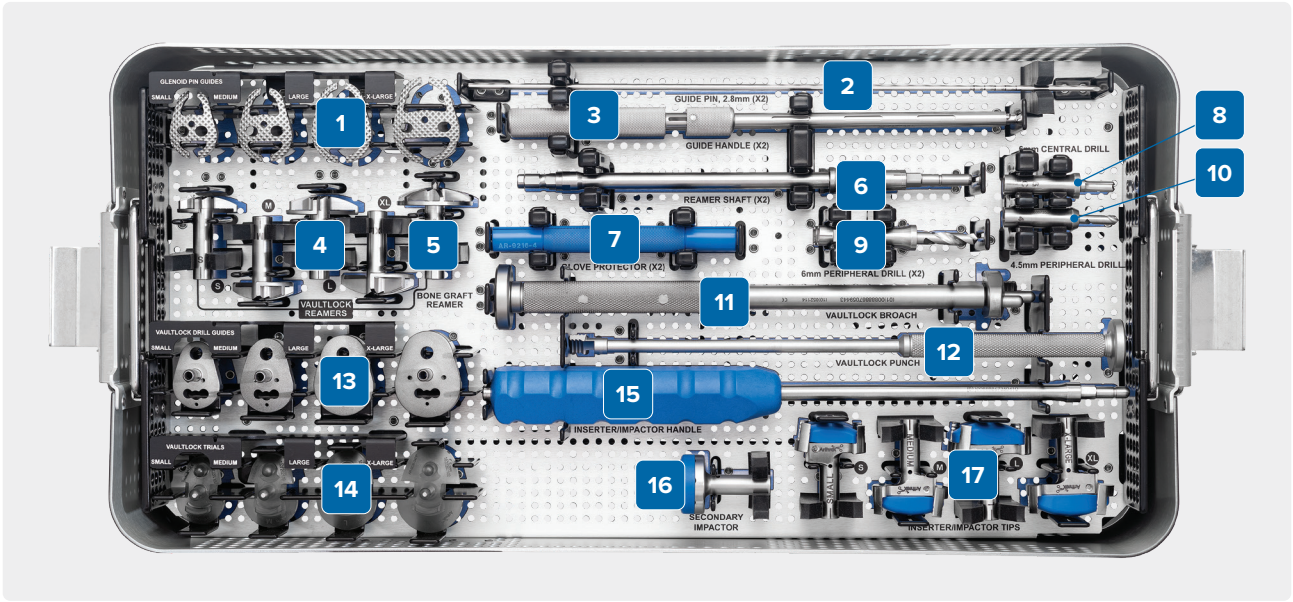
Ordering Information

Instruments	
Univers VaultLock® and keeled glenoid instrument set	AR-9217VKS

Literature	
Univers Apex Optifit™ Surgical Technique	LT1-000262-en-US
Eclipse™ Total Shoulder Arthroplasty System Surgical Technique	LT1-000009-en-US

Implants	
Univers VaultLock Glenoid trial, small	AR-9106-01
Univers VaultLock Glenoid trial, medium	AR-9106-02
Univers VaultLock Glenoid trial, large	AR-9106-03
Univers VaultLock Glenoid trial, extra large	AR-9106-04
Keeled Glenoid, cemented, small	AR-9104-01
Keeled Glenoid, cemented, medium	AR-9104-02
Keeled Glenoid, cemented, large	AR-9104-03
Keeled Glenoid, cemented, extra large	AR-9104-04

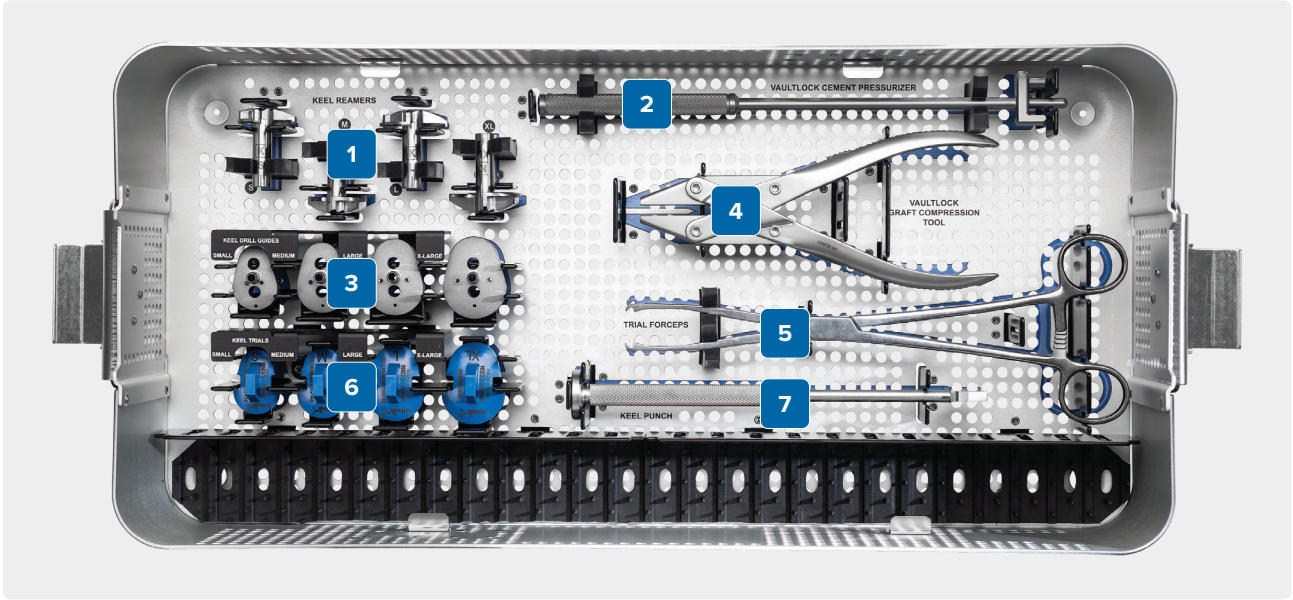
Univers VaultLock® and Keel Glenoid Instrument Set (AR-9217VKS)



Top Tray

1	Univers VaultLock®/keeled glenoid pin guide, quick connect; small–x-large	AR-9215-VK-1/2/3/4
2	Steinmann pin, 2.8 mm	AR-9207
3	Quick-connect handle	AR-9215-1-03
4	Modular Univers VaultLock reamers, small–x-large	AR-9228 – AR-9231AG
5	Modular bone graft reamer	AR-9229VLG
6	Quick-connect drive shaft	AR-9617
7	Glove protector	AR-9216-4
8	Modular cannulated central drill, 6 mm	AR-9216AG
9	Modular superior drill, 6 mm	AR-9221AG
10	Modular inferior drill 4 5 mm	AR-9239AG
11	Glenoid broach	AR-9233
12	Glenoid punch	AR-9234
13	Univers VaultLock drill guide, quick connect, small–x-large	AR-9231-VL-01/02/03/04
14	Univers VaultLock glenoid trial, small–x-large	AR-9236-01/02/03/04PP
15	Glenoid inserter/impactor handle	AR-9241-2
16	Secondary glenoid impactor	AR-9241-00
17	Glenoid inserter/impactor tips, small–x-large	AR-9241-01/02/03/04

Univers VaultLock® and Keel Glenoid Instrument Set (AR-9217VKS)



Bottom Tray

1	Modular nautilus reamers, small–x-large	AR-9228 – AR-9231NRM
2	Cement pressurizer	AR-9235
3	Keel glenoid drill guide, quick connect, small–x-large	AR-9215-K-3/5/7/9
4	Graft compression tool	AR-9236GT
5	Glenoid trial forceps	AR-9238
6	Keel glenoid trial, small–x-large	AR-9217 – AR-9219-1
7	Keel glenoid punch	AR-9214

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 CE conformity mark, manufacturer, authorized representative, and importer information

US patent information

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