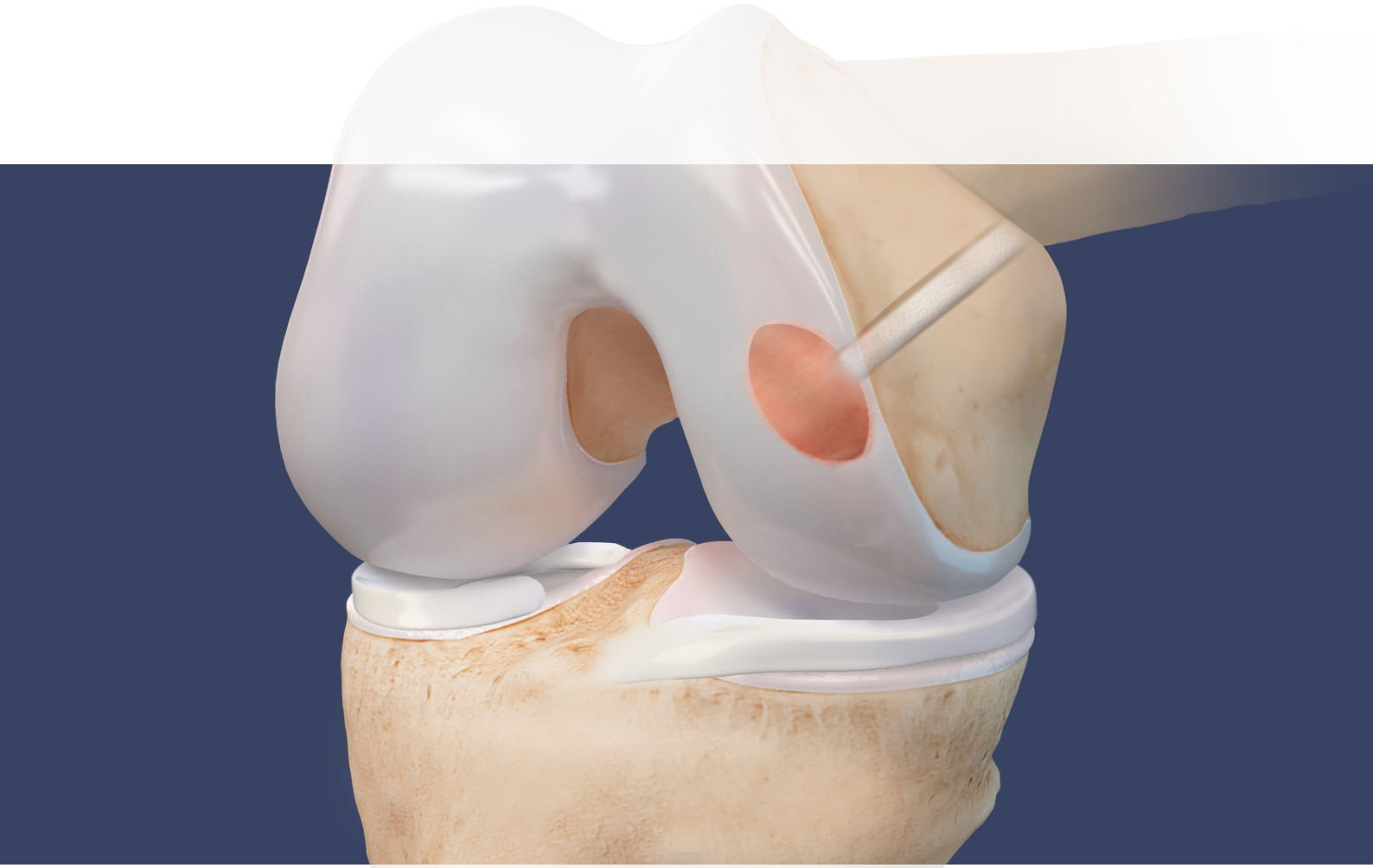
Core Decompression for Early-Stage Osteochondritis Dissecans Using the Expandable Reamer

Surgical Technique



Arthrex®

Osteochondritis Dissecans (OCD)

OCD is a focal, idiopathic alteration of subchondral bone with potential for instability and disruption of adjacent articular cartilage that may result in premature osteoarthritis.[1]

This technique aims to treat stable OCD lesions with intact cartilage by decompressing and removing compromised subchondral bone below the articular cartilage of the femoral condyle. Using arthroscopic and fluoroscopic guidance as a reference, the instruments allow for a safe and reproducible treatment of OCD lesions of the femoral condyle. Once the lesion is decompressed, Arthrex offers multiple biologic options to backfill the socket and cavity.

Osteochondritis Dissecans Technique

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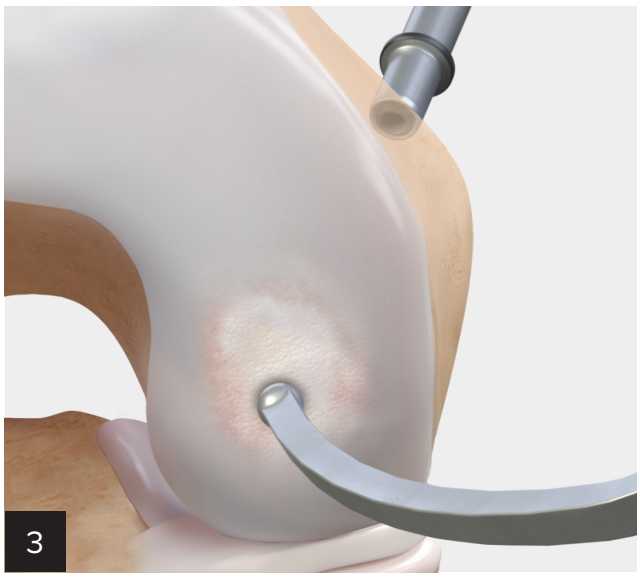
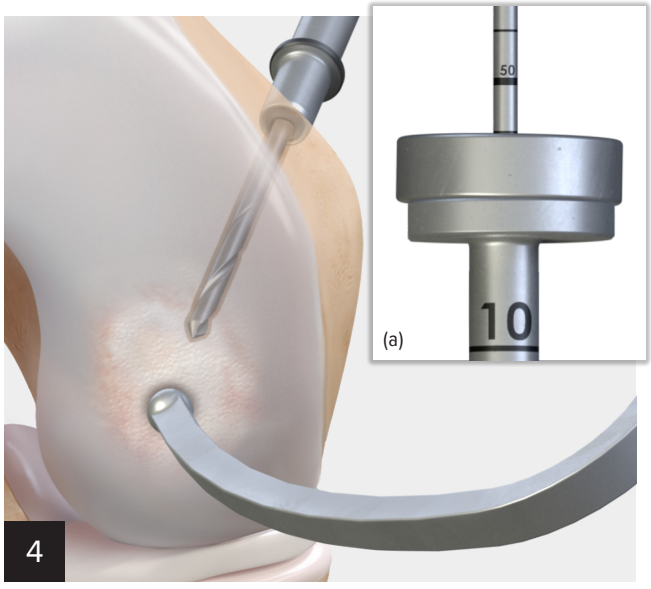
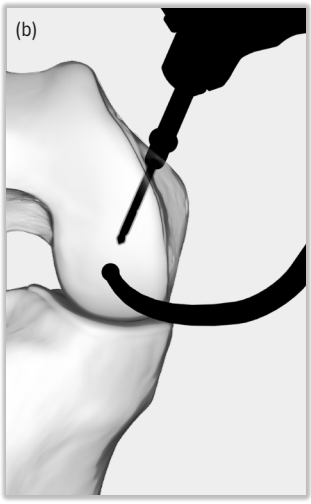
After initial assessment of the knee joint with an arthroscope, insert the ball-tip marking hook into the appropriate portal until it is flush with the cartilage surface.

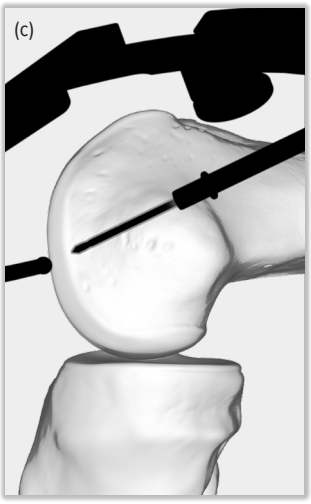
Place the 5 mm drill guide sleeve and the blunt obturator flush against the outer cortex of the involved femoral condyle. **Note: Reference the intraosseous distance off of the calibrated 5 mm drill sleeve where it meets the back of the drill guide handle (a).**



Once the 5 mm drill guide is flush against the bone, remove the blunt obturator and insert the 2.4 mm drill guide sleeve.

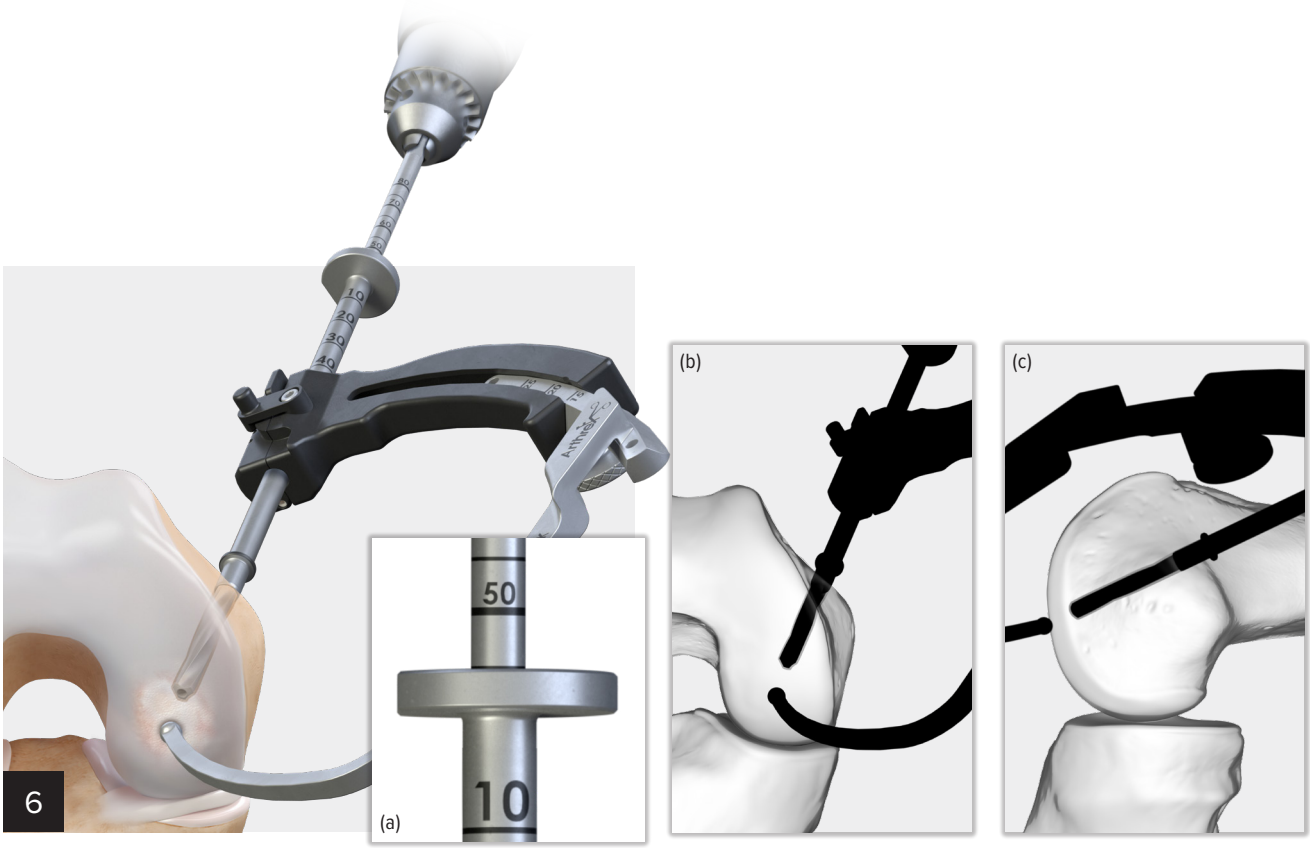




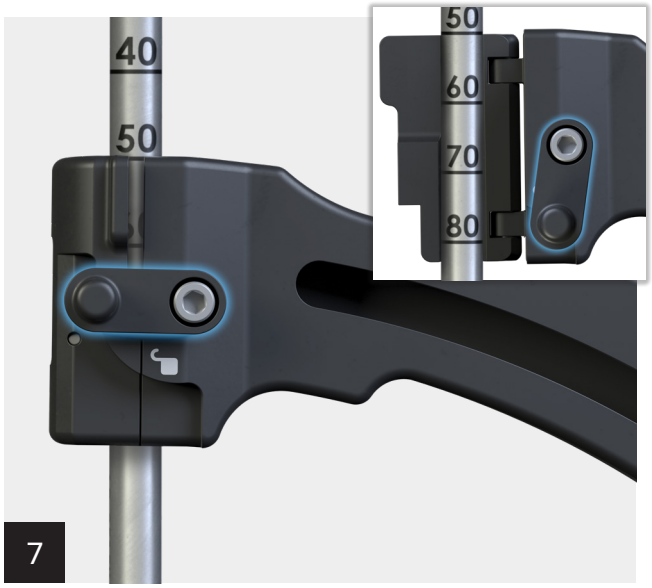


Insert the 2.4 mm calibrated guide pin through the arthroscopic drill guide under fluoroscopic view and drill to the desired depth. Reference the drilling depth of the 2.4 mm calibrated guide pin from the back of the 2.4 mm drill guide sleeve insert (a). **Note: Confirm the appropriate drill depth in both A/P (b) and lateral (c) fluoroscopic views.**

Once the desired drill pin placement is achieved, remove the 2.4 mm drill guide sleeve.



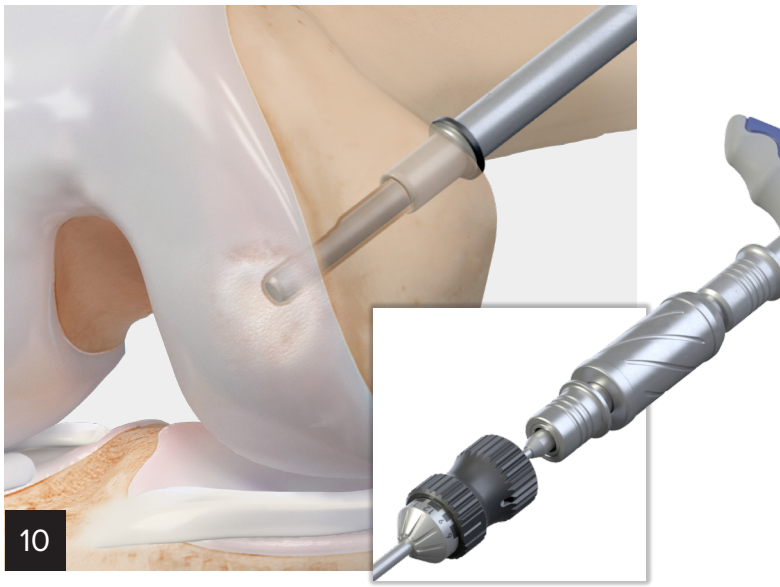
Insert the 5 mm cannulated drill into the 5 mm drill guide sleeve and advance the drill to the appropriate depth. Reference the drilling depth of the 5 mm calibrated drill from the back of the 5 mm drill guide sleeve (a).
Note: Confirm appropriate drill depth in both A/P (b) and lateral (c) fluoroscopic views.



Once the 5 mm drill depth has been confirmed, remove the drill guide handle and marking hook by moving the lever to the unlocked position and rotating the handle off of the drill guide sleeve.

Mallet the drill guide sleeve 10 mm into the femoral cortex to ensure it maintains the correct trajectory. Reference the mallet depth off of the back of the drill guide sleeve and 5 mm drill calibrations.

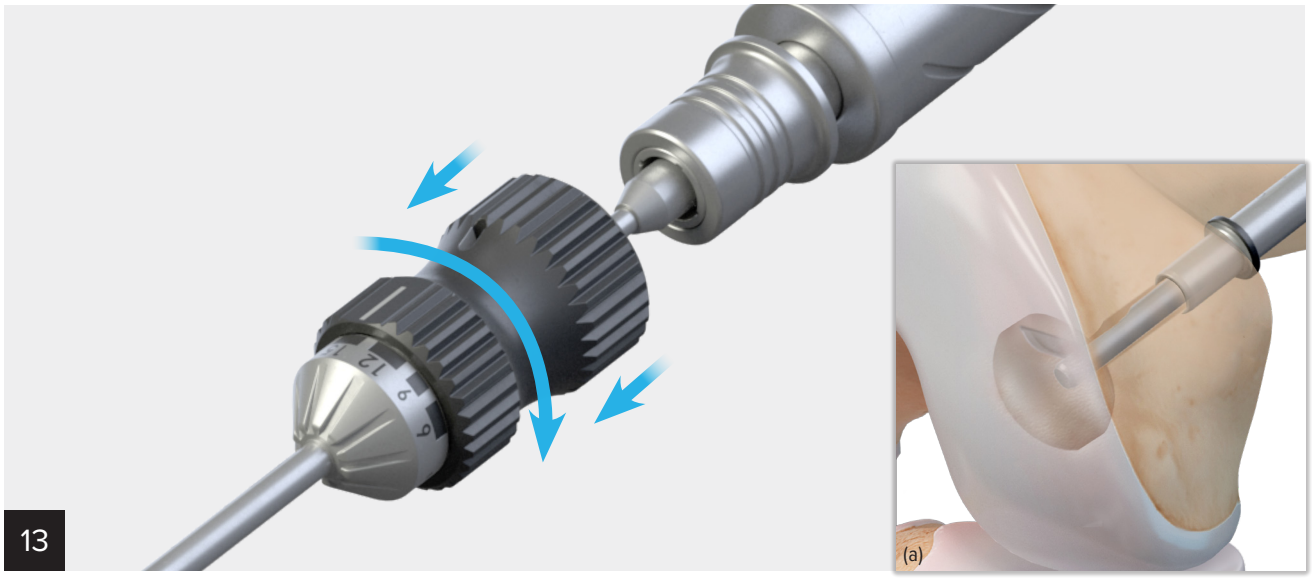
Remove the 5 mm cannulated drill on power so that only the drill guide sleeve is left in place.



With the drill sleeve in place, insert the expandable reamer into the sleeve and advance it to the same depth as the socket created using the 5 mm cannulated drill (step 6).

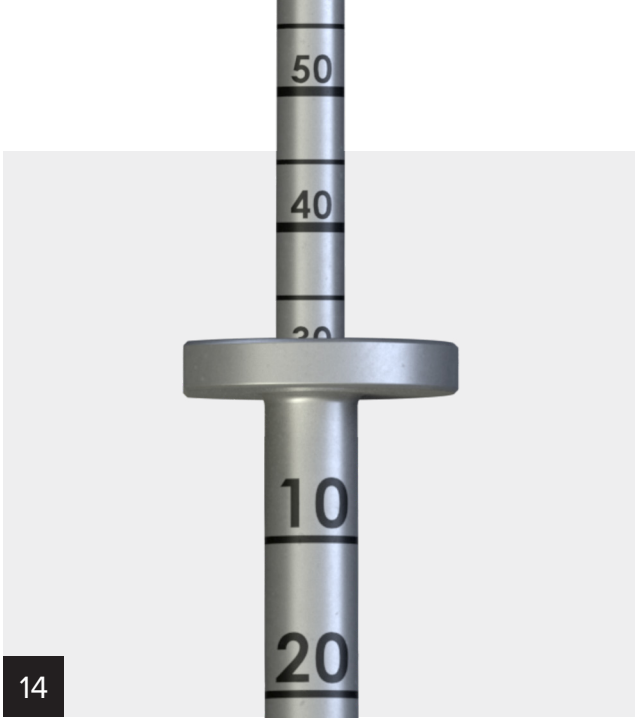
Open the blade by twisting the knurled portion of the expandable reamer clockwise until a click is felt. Rotate the expandable reamer clockwise and counterclockwise until no resistance is felt. **Note: The expandable reamer should only be expanded one or two clicks at a time by turning the knurled knob clockwise.**

Incrementally adjust the expandable reamer one click at a time until the desired socket diameter is achieved to remove all of the necrotic bone. Once the blade has been expanded enough to decompress the lesion, pull back while rotating the handle to create the appropriate socket.



If too much torque is encountered in the bone, the torque limiter will engage and not allow the blade to spin inside the socket. If this happens, reduce the diameter of the cutting blade by pushing the knurled knob forward and twisting counterclockwise.

Once the blade turns easily, expand the blade one or two clicks at a time and rotate the reamer by hand until the necrotic bone is removed (a). If the torque limiter continues to prevent cutting, remove the expandable reamer and lavage the socket. To retract the blade inside the expandable reamer, push up on the knurled portion and twist counterclockwise until the white laser line is at the fully closed position to the left edge of the 6 setting.



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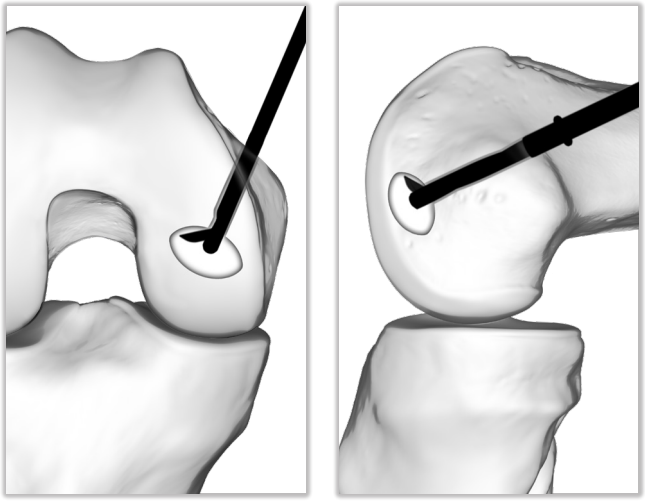

The depth of the socket can be referenced off of the back of the drill guide sleeve and calibrations on the expandable reamer. Confirm adequate decompression in both A/P and lateral fluoroscopic views. **Note: To retract the cutting blade, push the knurled knob forward and twist counterclockwise.**

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Once the expandable reamer has been removed, insert the biologics delivery cannula into the prepared socket. Remove the inner stylet and flush out the defect with a combination of fluid and suction attached to the end of the delivery cannula. This will help ensure that all bone debris and necrotic tissue has been removed.

Process for Mixing Demineralized Bone Matrix (DBM) With Autologous Fluid

Transfer platelet-rich plasma (PRP)/BMA into a separate sterile basin and draw into a syringe.

Fill the mixing and delivery syringe with AlloSync Pure demineralized bone matrix. Use a female-to-female luer adapter to connect the PRP/BMA syringe. Add the autologous fluid to the mixing and delivery syringe in a 5:3 ratio of DBM to fluid.

Unsnap the pushrod from the mixing element with counterpressure on the tip of the pushrod. Push and pull the mixing element back and forth until the material thoroughly mixed.

Pull back on the mixing element and snap the pushrod back onto the mixing element.


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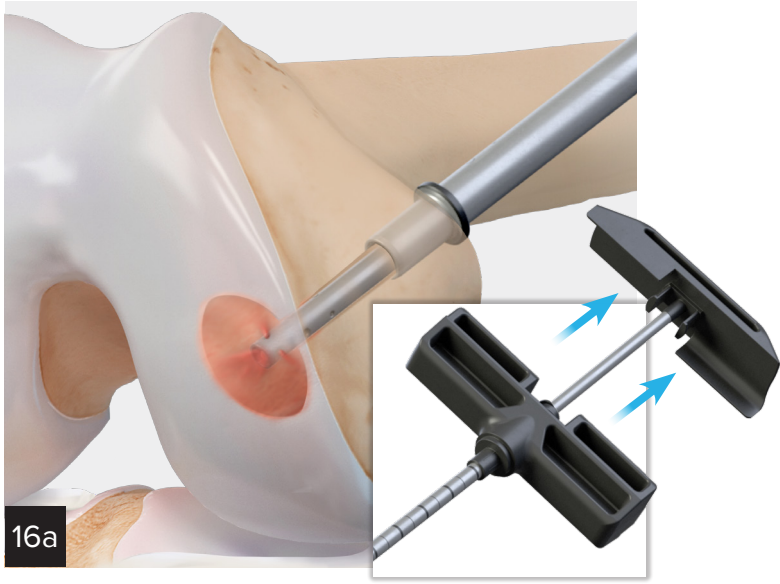
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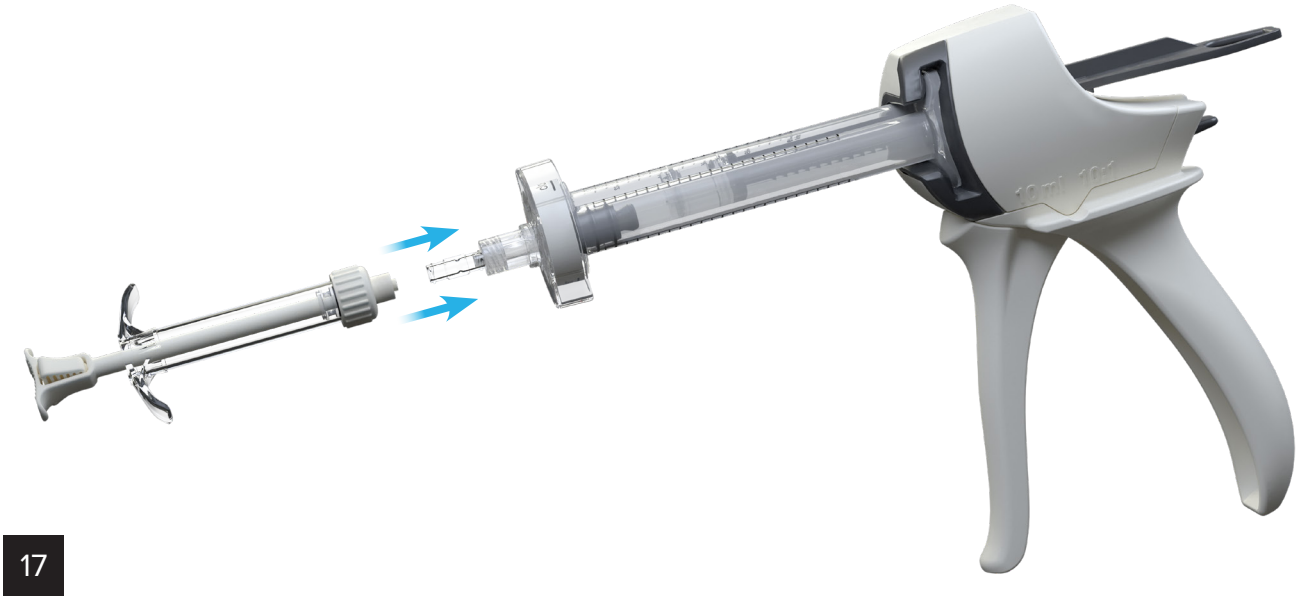
Attach the mixing and delivery syringe to the biologics delivery cannula and slowly inject the material until the syringe is empty. To fill the void created by the expandable reamer, use the inner stylet to expel DBM mixture from the delivery cannula.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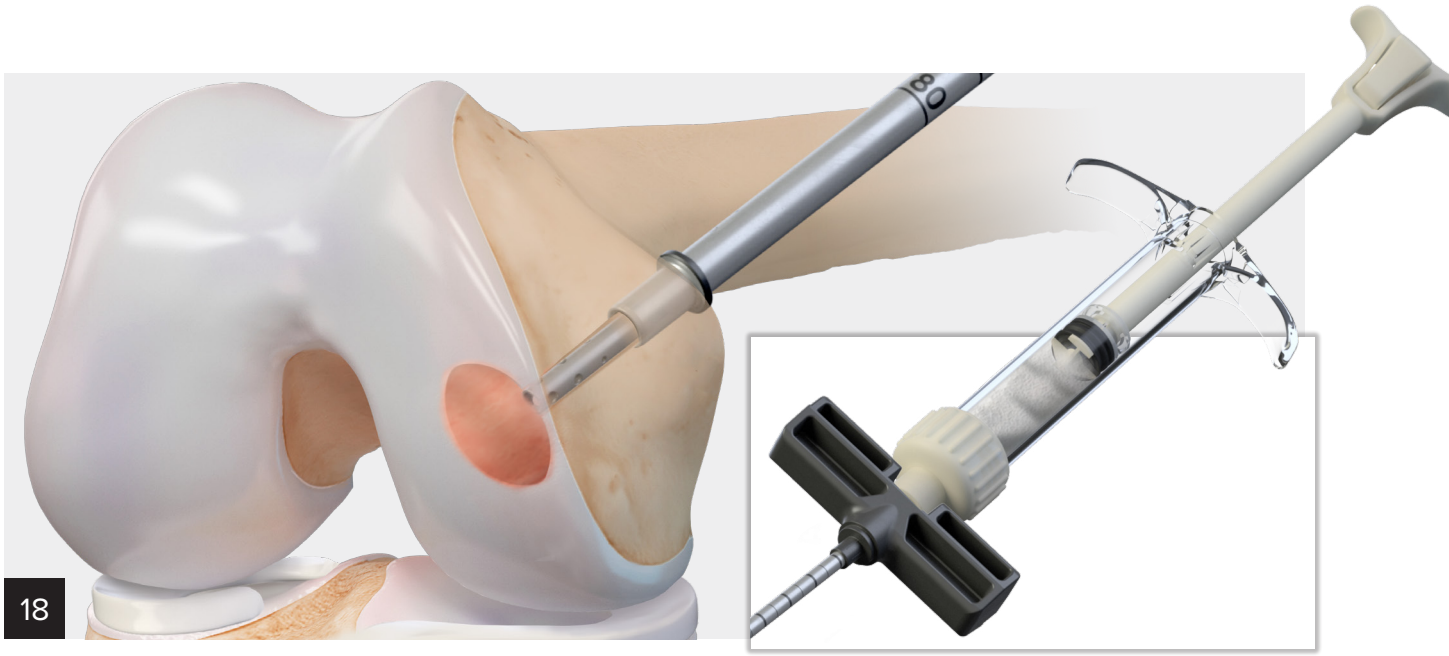
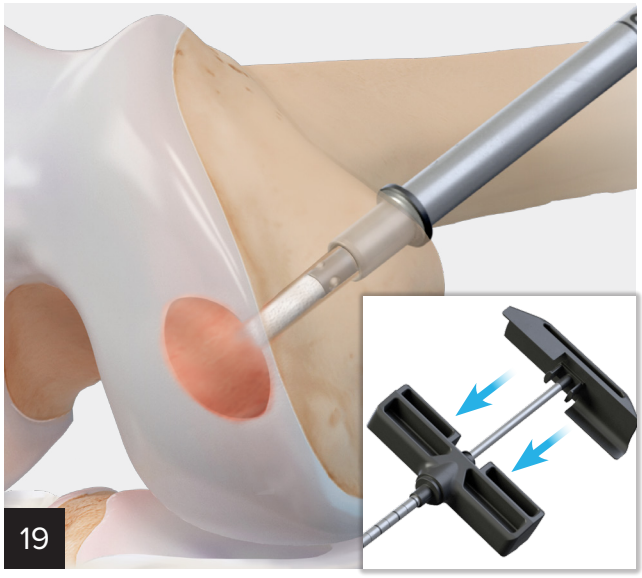
Quickset™ cement can be used to backfill the remaining socket (prepare as outlined in LB1-0840-EN)*. After preparing the Quickset cement, transfer it into a mixing and delivery syringe. Delivery from the syringe will reduce the chance of overpressurization during delivery.

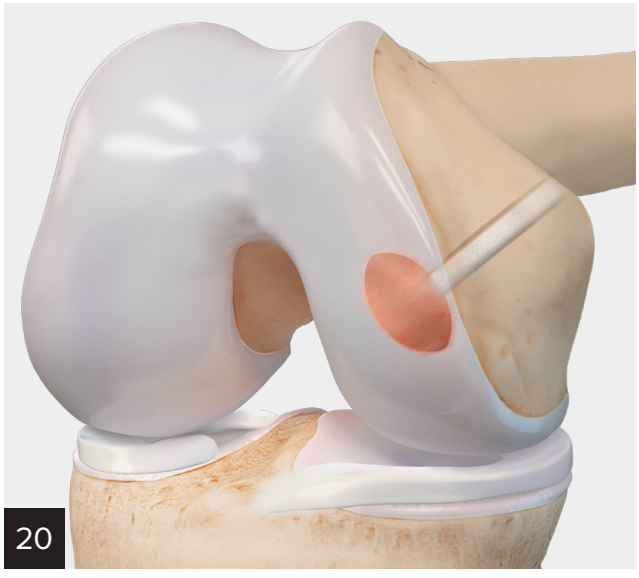
*Quickset™ Injectable Macroporous Calcium Phosphate Brochure



Slowly inject the Quickset™ cement into the delivery cannula until the syringe is empty.



The inner stylet can then be used to help deliver any cement that remains in the drill sleeve. As the cement is expelled, slowly retract the delivery cannula to backfill the entire length of the drilled socket.



Final construct.

Ordering Information

AVN and OCD Reaming Set (AR-3510S)

Product Description	Item Number
Kits	
AVN Disposable Kit	AV-**3519H**
OCD Knee Kit	AR-**3519K**
Instruments	
Universal Marking Hook, AVN Universal Marking Hook, OCD	AR-**3514H** AR-**3514K**
Drill Guide Handle, AVN	AR-**1510HH**
Drill Sleeve, AVN Drill Sleeve, OCD	AR-**3515H** AR-**3515K**
Drill Sleeve Insert, AVN Drill Sleeve Insert, OCD	AR-**3516H** AR-**3516K**
Blunt Tip Obturator, AVN Blunt Tip Obturator, OCD	AR-**3515HD** AR-**3515KD**
T-Handle	AR-**623-27**
Torque Adapter	G**207163**
Side Release RetroConstruction™ Handle	AR-**1510HR**
Slotted Mallet	AR-**9231-21**
AVN/OCD Instrument Case	AR-**3510C**

AlloSync™ Pure Demineralized Bone Matrix

Product Description	Item Number
1 cc	ABS-**2010-01**
2.5 cc	ABS-**2010-02**
5 cc	ABS-**2010-05**
10 cc	ABS-**2010-10**

AlloSync DBM Gel

Product Description	Item Number
DBM Gel, 1 cc	ABS-**2013-01**
DBM Gel, 5 cc	ABS-**2013-05**
DBM Gel, 10 cc	ABS-**2013-10**

Quickset™ Cement

Product Description	Item Number
Quickset Cement, 5 cc	ABS-**3005**
Quickset Cement, 8 cc	ABS-**3008**
Quickset Cement, 16 cc	ABS-**3106**

Products may not be available in all markets because product availability is subject to the regulatory approvals and medical practices in individual markets. Please contact Arthrex if you have questions about the availability of products in your area.

References

1. Edmonds EW, Shea KG. Osteochondritis dissecans: editorial comment. *Clin Orthop Relat Res.* 2013;471(4):1105-1106. doi:10.1007/s11999-013-2837-6.

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 and/or outcomes.

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