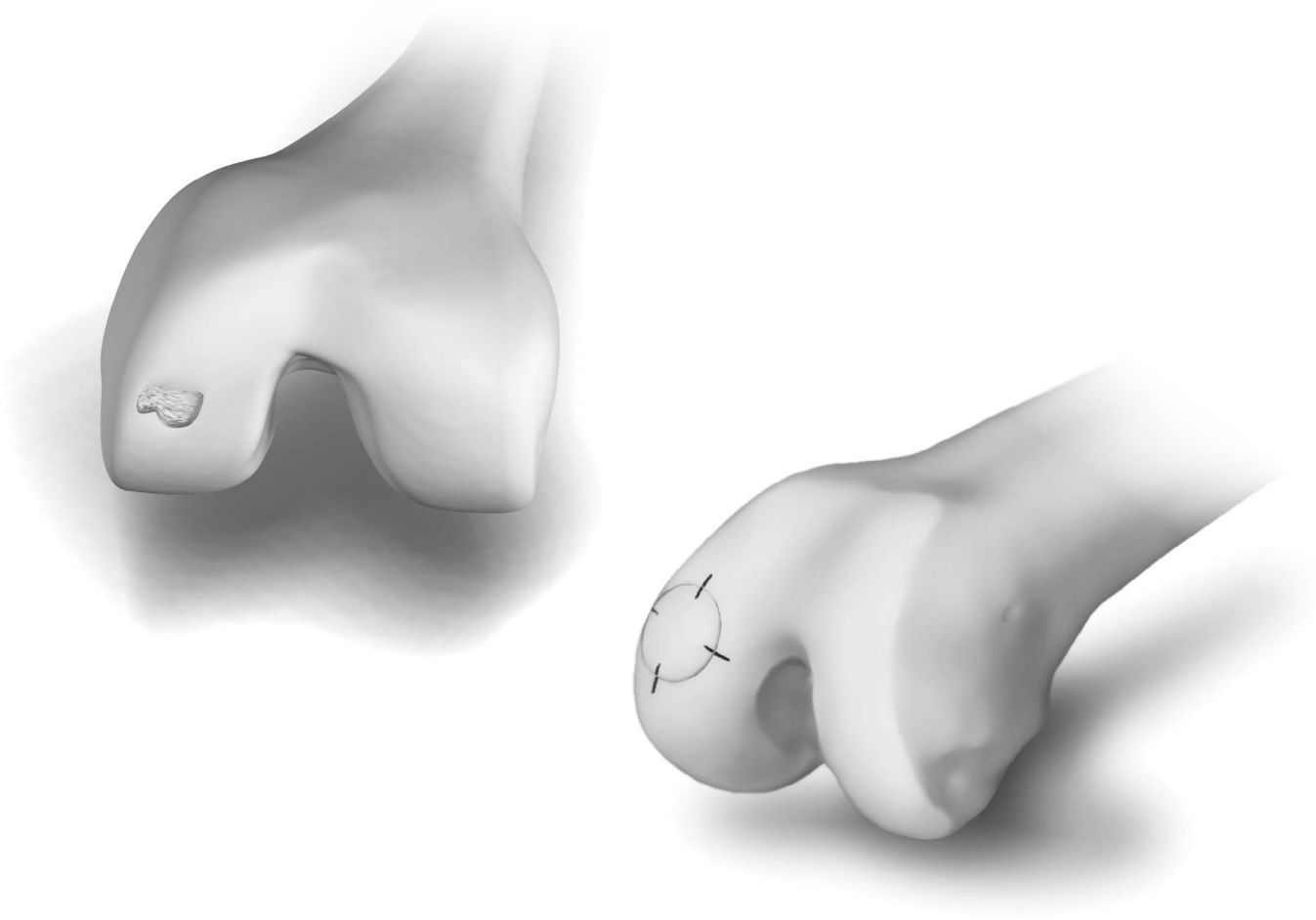


Articular Cartilage Resurfacing

Single Osteochondral Allograft Core Surgical Technique



PATIENT CONDYLE PREPARATION

STEP 01 IDENTIFY DEFECT.

Perform a parapatellar arthrotomy and retract the patella to expose the condyle. Identify the defect on the condyle (FIG.1A).

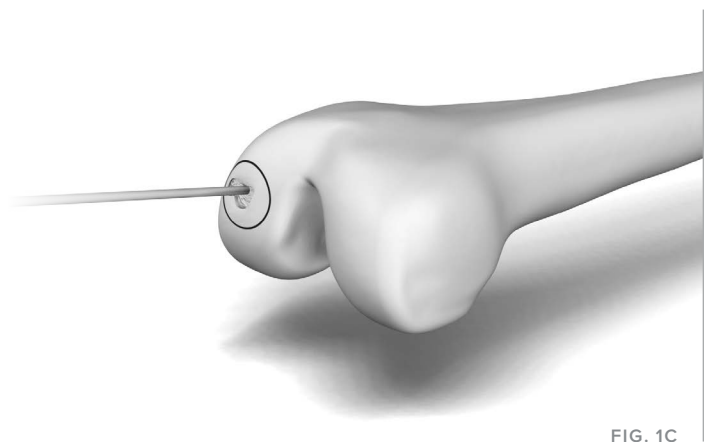
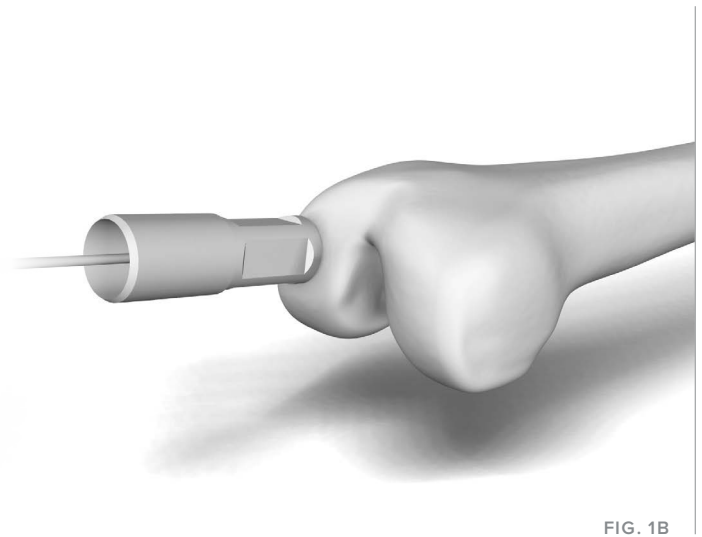
STEP 02 SIZING GUIDE.

Rest the guide (dull side down) against the condylar surface. The appropriately sized guide should circumferentially contact the joint surface and cover the entire defect. Make a hash mark on the “north”, or 12 o’clock position. Holding the guide in place, drill the Steinmann pin approximately 25 mm into the condyle (FIG.1B).

TIP: Prior to removing the guide, trace the entire circumference with a marker.

STEP 03

Remove the guide leaving the pin inserted. The pin should be perpendicular to the condylar surface (FIG.1C).



SELECTING ALLOGRAFT HARVEST LOCATION

STEP 04 FIND HARVEST LOCATION.

Set up the vise on a sterile workstation. Attach the articulating arm to the post. Bring the allograft close to the patient's condyle to determine the site of allograft harvest (FIG. 2A). Secure the allograft in the vise in the same orientation of the patient's exposed condyle.

TIP: Best surface congruity match may be found at a different anatomical location than the defect.

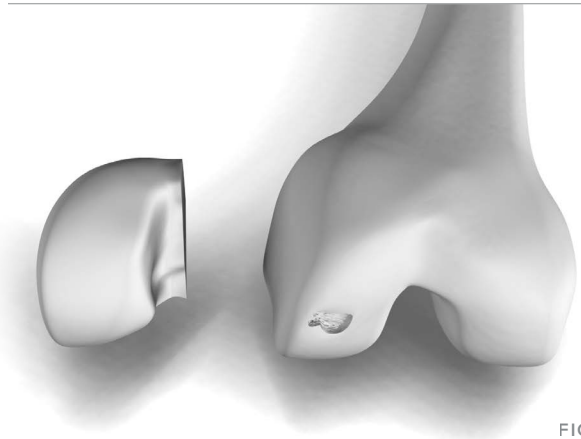


FIG. 2A

STEP 05

Place the selected guide on the allograft to find the appropriate harvest location. The guide should circumferentially contact the articular surface (FIG. 2B). Trace the entire circumference with a marker.

TIP: Place a Steinmann pin through the center of the guide (*blunt side down*). Compare the angle of the pin to the one previously placed in the patient's condyle.

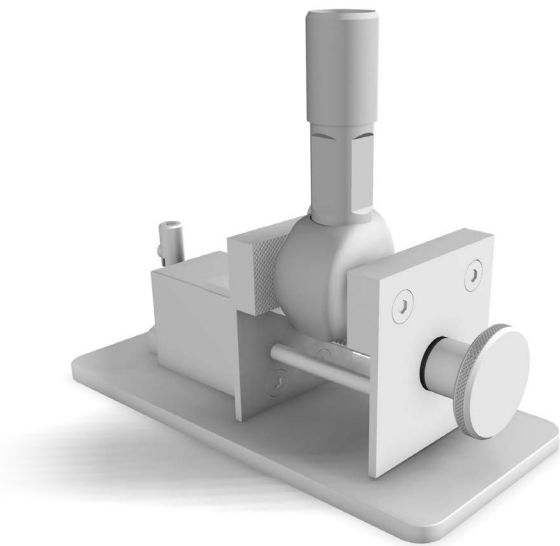


FIG. 2B

PATIENT CONDYLE PREPARATION (CONTINUED)

STEP 06 SCORE PATIENT CARTILAGE.

Place the cutter over the pin in the patient's condyle, sharp end down (FIG. 3A). By hand, press the cutter against the cartilage surface and rotate the cutter until the complete thickness of the articular cartilage is cut and the instrument is against cortical bone.

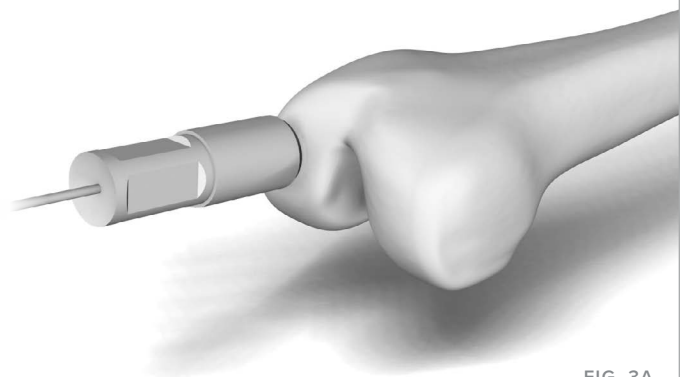


FIG. 3A

PATIENT CONDYLE PREPARATION (CONTINUED)

STEP 07 REAM AND MEASURE DEFECT.

Select the same size flat drill bit, mount the drill bit on a cannulated drill and place it over the pin in the patient's condyle. Start movement of the drill before contacting the articular surface. With constant irrigation, slowly advance the drill through the articular surface, through the cortical bone, and into cancellous bone (FIG. 3B). The surgeon should examine the advancement after every 2–3 mm. Proper depth is achieved when there is 5–10 mm total depth and good bleeding bone. Using the cylinder depth gauge, measure and record the depths from the articular cartilage surface at the N, S, E, W positions (FIG. 3C).

TIP: The ideal depth of a femoral Osteochondral Allograft recipient site is between 5–10 mm.

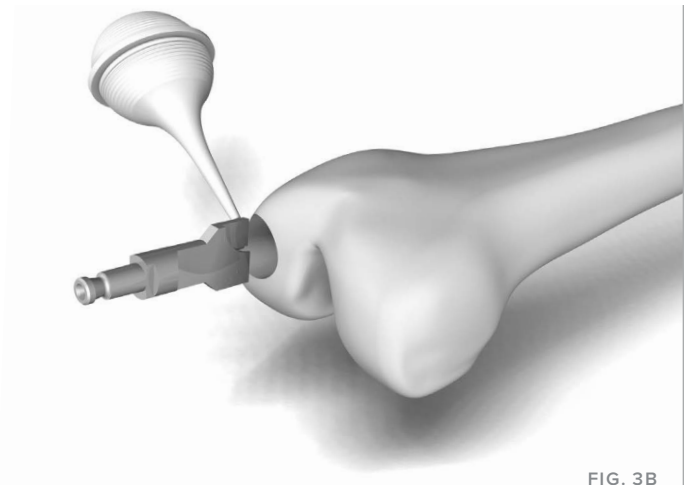


FIG. 3B

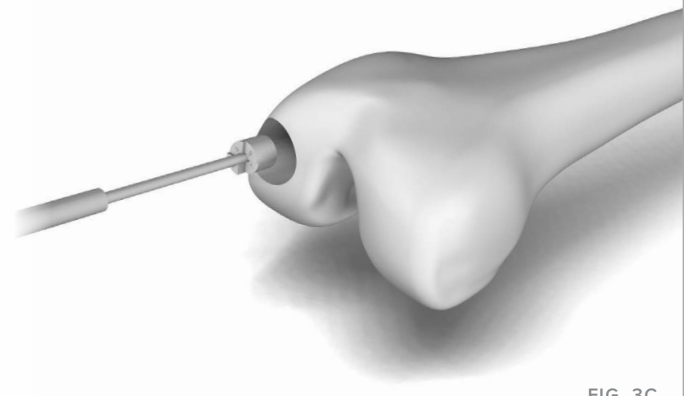


FIG. 3C

ALLOGRAFT HARVEST

STEP 08 CORE PREP.

Attach the appropriately sized ring guide to the articulating arm. Place the guide blunt side down and position with the articulating arm according to the previous circumferential marking (FIG. 4A) Tighten the knob on the articulating arm to hold it in place. Reverse the cutter guide sharp side down and score the cartilage.

TIP: Ring guide stability can be reinforced with short pin for additional fixation. **TIP 2:** From inside the ring guide, place the hashmark at the north position.

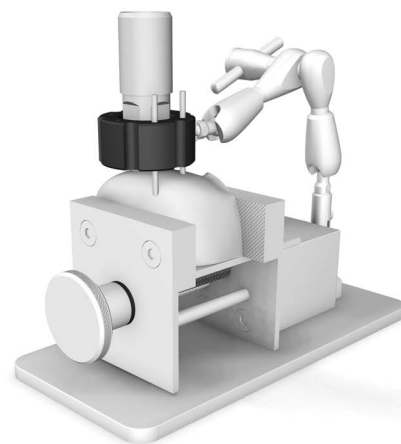


FIG. 4A

ALLOGRAFT HARVEST (CONTINUED)

STEP 09 HARVEST CORE.

Select appropriately sized coring reamer and, with constant irrigation, slowly advance the coring reamer into the allograft approximately 10–20 mm. Do not advance the coring reamer completely through the allograft. While continuing irrigation and forward rotation of the coring reamer, slowly back the coring reamer out of the allograft (FIG. 4B).

TIP: If the core remains in the coring reamer, unscrew the hub of the coring reamer from the main cutting sleeve. Advance the core out proximally by pushing the distal end of the sleeve down over a smaller sized blunt end of a ring guide.

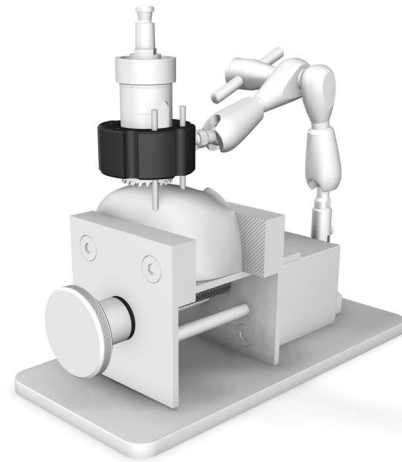


FIG. 4B

STEP 10 TRANSECT ALLOGRAFT.

Adjust / reposition the graft in the vise to enable core excision by transecting the allograft with the oscillating saw 10–20 mm below the cartilage surface. To prevent abrupt dislocation or propelling of the core, either place a finger or graft holder on the surface of the allograft (FIG. 4C). Remove the core from the condyle (FIG. 4D).

TIP: If reaming guide pins were previously used, remove them before transecting.

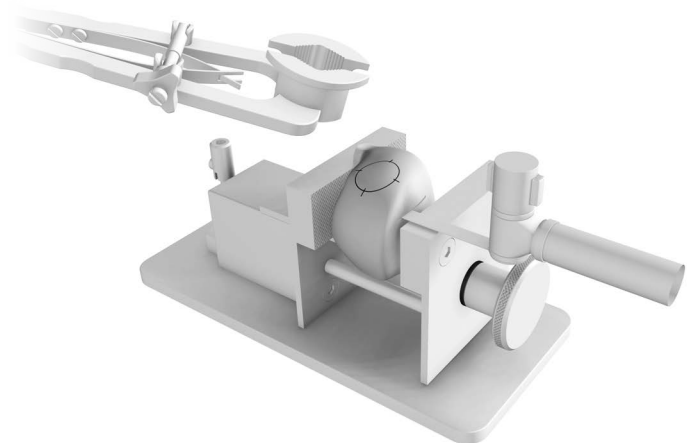


FIG. 4C

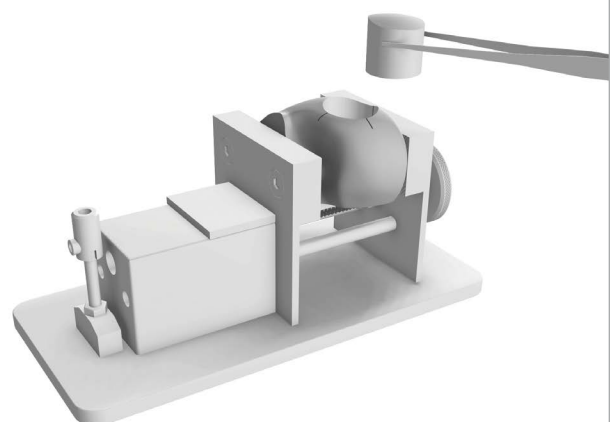


FIG. 4D

ALLOGRAFT HARVEST (CONTINUED)

STEP 11 CORE DEPTH.

Using the previously recorded depth measurements of the patient's condylar cavity, mark the depth of the core from the cartilage surface at the N, S, E, W positions. Connect these depth markers to form a circumferential mark at the proper depth (FIG. 4E).

TIP: Prior to proceeding, re-verify these depth measurements.



FIG. 4E

STEP 12

Open the graft holder to 2–3 mm wider than the core. Orient core cartilage-side down so that the depth ring is along the surface of the jaws of the graft holder. Tighten to secure the core with the tension bar. The core should be secure but not distorted (FIG. 4F).



FIG. 4F

STEP 13 PREPARE CORE.

Use the face of the graft holder as a cutting guide. Under constant irrigation, advance an oscillating saw from the outer perimeter inward (FIG. 4G). Remove the core from the graft holder. With a rongeur, chamfer the edge of the bone. Check depth dimensions. Using a pulse lavage, thoroughly remove blood and marrow from the graft bone (FIG. 4H).

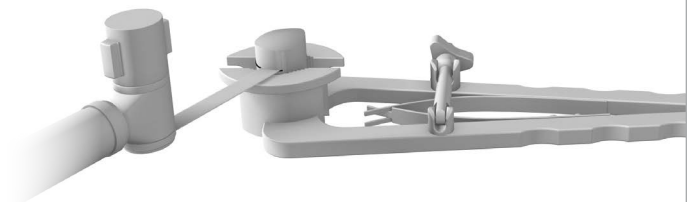


FIG. 4G



FIG. 4H

ALLOGRAFT INSERTION

STEP 14

The articular cartilage around the perimeter of the patient's condylar cavity may slightly migrate to interfere with the press fit dimensions. Dilate by reinserting the guide (dull side down) into the patient's condylar cavity or remove excess cartilage by trimming with a knife.

STEP 15

Remove the Steinmann pin from patient's condyle and orient the core by lining up the north hashmarks. If any interference is noted, carefully correct the core and/or cavity prior to reducing the core.

TIP: A suture can be placed behind the graft to facilitate core removal, if necessary. If there is a congruent fit then the suture can be pulled out from behind the core.

STEP 16 INSERT CORE.

The appropriate press fit reduction is accomplished by advancing the core into the cavity, using thumb pressure or a light tamp (around the edge of the graft) (FIG. 5A). Care should be taken to ensure that all edges advance equally and when core is fully seated; the surface is flush with the surrounding cartilage. (FIG. 5B). Cycle knee to check congruity.

TIP: In place of using a tamp, cycle the knee with varus or valgus pressure to seat the core.

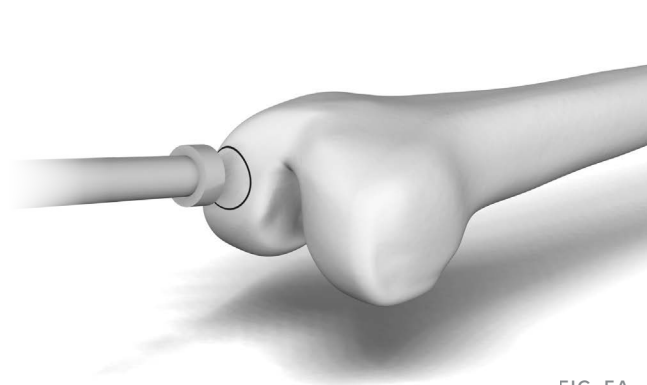


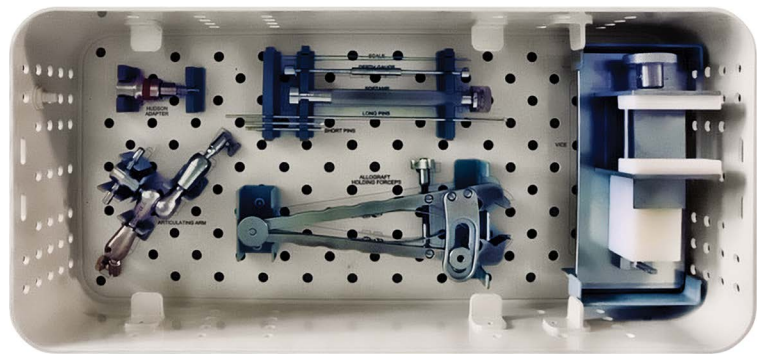
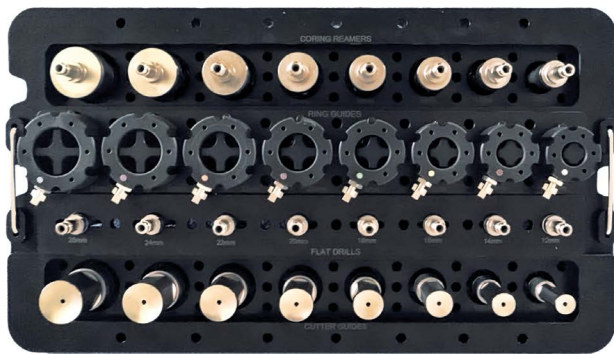
FIG. 5A



FIG. 5B



JRF Ortho Osteochondral Allograft Core Instrumentation



JRF ALLOGRAFT INSTRUMENT SETS

Available Sizes: 12mm, 14mm, 16mm, 18mm, 20mm, 22mm, 24mm, 26mm

JRF Ortho specializes in providing orthopedic surgeons with the highest viability, most widely available fresh osteochondral allograft joint repair solutions *helping patients regain movement and improve their quality of life.*

The techniques presented herein are intended to demonstrate the practice of surgeons who incorporate allograft tissue into their articular cartilage resurfacing surgical procedure. Although articular cartilage allografts are distributed through JRF Ortho, JRF Ortho does not practice medicine, does not recommend these or other surgical techniques or specific products for the treatment of a particular defect or injury. Further, JRF Ortho does not endorse any surgeon or surgical practice. JRF Ortho does not warrant the accuracy, adequacy or completeness of the content of this brochure and under no circumstances shall JRF Ortho, its suppliers, distributors or other third parties be liable for any damages or injury whatsoever, including direct, indirect, special or consequential damages, arising out of the use of the techniques or products described herein.

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