



# Lever Action Plate System<sup>®</sup> Surgical Technique Guide for Fixed Angle Plate

1. Perform a standard or extended trans-FCR approach as the fracture requires.
2. Select the correct plate for the procedure. Apply the guide block to the plate using the guide block lock screw (MCG9003) through the proximal radial black ringed hole. (Guide block lock screw can be moved to proximal ulnar hole if required).



4. Drill a screw hole through the center of the proximal oblong hole in the plate using a 2.0mm drill bit through the drill bit guide (MCG9001).



3. Apply the plate to the distal radius with the guide block attached.



5. Measure the depth. Insert a 2.5mm non-locking screw to provisionally affix the plate to the proximal fragment. Check the position of the plate with fluoroscopy.



6. Provisionally reduce the fracture by pressing downward with a thumb on the plate with one hand. Translate the carpals volarly with the other hand, and apply traction across the wrist in an anterodistal direction.



7. Provisionally stabilize the fracture using the fixed angle k-wires (2 wires if possible) through the distal K-wire holes in the plate. Confirm with fluoroscopy the plate is in the correct position on the volar cortex, just behind the watershed line. Note the K-wires may be intra-articular if volar tilt is not anatomic; however the plate is placed correctly. If the reduction is clinically acceptable at the conclusion of this step, skip to Step 29 (page 5).



*This surgical technique is intended exclusively for physicians to illustrate the manufacturer's suggested method for the procedure. It does not constitute medical advice. Each individual medical case should be examined and evaluated according to the patient's situation. Decisions regarding medical care are at the sole discretion of the surgeon. Not intended for distribution. All images are the property of McGinley Orthopaedic Innovations, LLC and are not to be copied, used or distributed without permission.*

**8.** If volar tilt has not been restored, or if there is a depressed die-punch fragment, plate-assisted reduction can be performed. Adjust the oblong hole as necessary to restore normal ulnar variance.



**9.** Insert the 2.0mm end of the drill bit guide (MCG9001) into the ulnar medial hole of the guide block. Drill a 2.0mm hole through the drill bit guide.



**10.** Measure the depth of the hole using the depth gauge (MCG9009). Place a 2.5mm fixation screw of the appropriate length into hole.

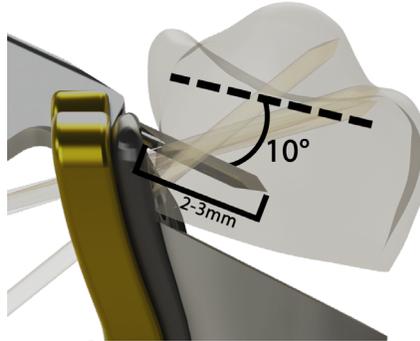


**11.** Repeat steps 9-10 in the radial medial hole.



**12.** Using the beam awl pin guide (MCG9002) at the entry point of the beam on the plate, fenestrate the volar cortex of the distal radius with the supplied K-wires unicortically to allow passage of the beam-awl.

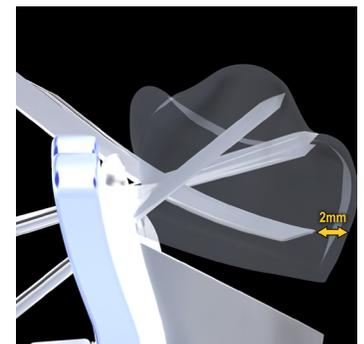
The first K-wire (short wire) should be placed in the middle hole of the pin guide. Angle the pin guide approximately 10° proximal to the most proximal articular fragment seen on a 22-degree tilt lateral, and place the pin about 2-3mm subchondral.



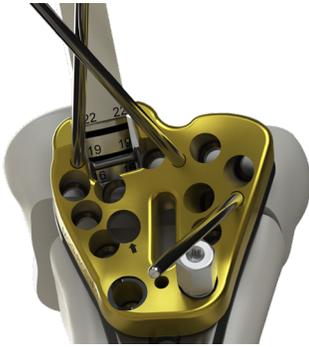
**13.** Use a second, longer K-wire through the remaining 2 holes of the guide to fenestrate the volar cortex. Remove all K-wires from the pin guide.



**14.** Place the beam awl (MCG9010), with the laser lines facing proximal, through the now fenestrated cortex just distal to and flat against the beam axle. Under intermittent 22-degree tilt lateral fluoroscopic assistance, gently mallet the beam-awl so that it rests just proximal to the most proximal aspect of the subchondral bone. The tip of the awl should be at least 2.0mm away from the dorsal cortex.



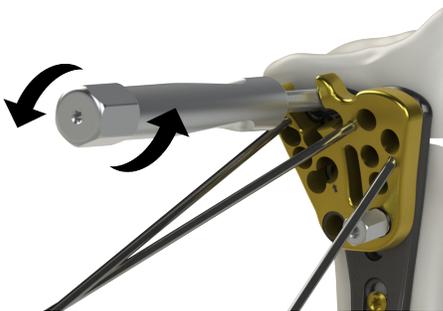
15. Measure the desired beam length using the laser lines on the beam-awl measured against the plate.



17. Extract the beam-awl gently using the extractor mallet (MCG9018).

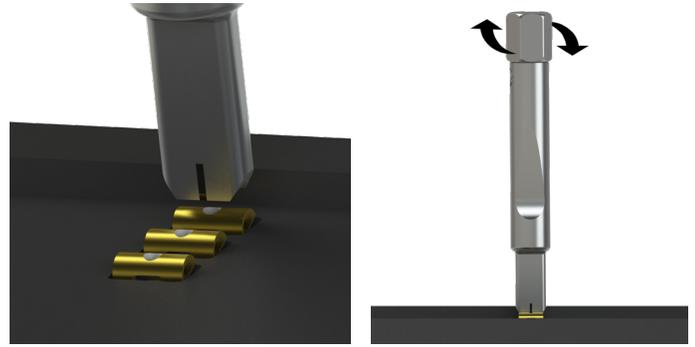


19. Rotate the inserter tool knob counterclockwise to release the beam.



21. Screw the volar tilt gauge housing (MA0103) into the beam-screw hole until it is fully engaged. Use the hexagonal driver on the screwdriver to drive the housing into the cortex. Note the threaded housing will tap the volar cortex.

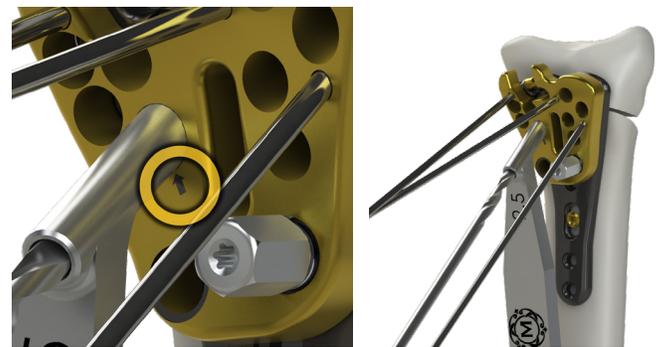
16. On the back table, load the correctly sized beam onto the inserter tool (MCG9014) by applying the inserter tool onto the curved end of the beam and rotating the knob clockwise until finger tight.



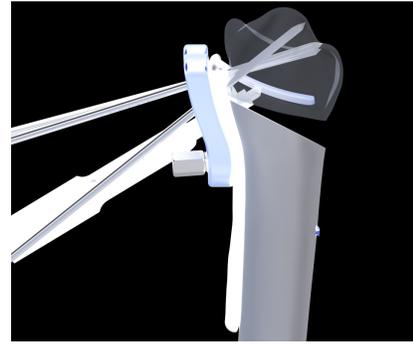
18. Once the beam is affixed to the plate, the beam can only be removed after removal of the plate. Place the beam into the awl slot under fluoroscopic guidance. Make sure the length and position of the beam is appropriate. Follow the curve made by the awl until the beam snaps into place. Ensure the snapping mechanism of the beam is in a lowered position. If the beam does not immediately click into place, gently tap the beam inserter tool with the mallet.



20. Using the drill bit guide (MCG9001) through the guide block in the beam-screw position (marked by arrow), drill a unicortical hole using the 2.5mm drill bit.



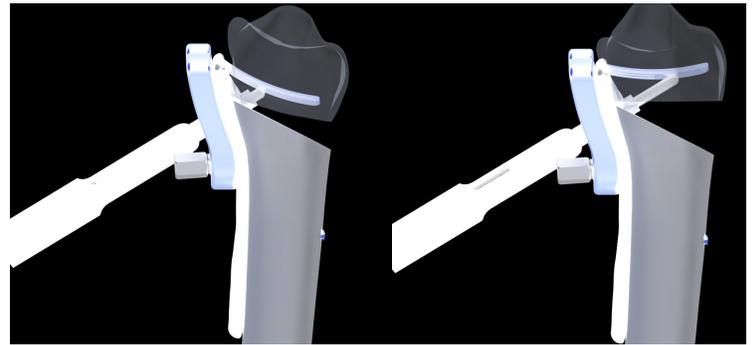
**22.** Place the volar tilt gauge shaft (MA0121) into the housing. Rotate the knob clockwise until fluoroscopy shows the shaft making contact with the beam.



**23.** Remove the K-wires placed through the plate for provisional fixation. Transverse K-wires placed outside of the plate to provisionally stabilize sagittal or coronal fractures should be maintained as long as they do not engage the proximal fragment.



**24.** Turn the knob on the volar tilt gauge clockwise until the desired reduction is achieved and confirmed on multiple fluoroscopic views.



**25.** Measure the depth of the volar tilt gauge shaft using the laser lines. This measures the length of the beam-screw. If the fracture is unstable, reapply the K-wires through the distal K-wire holes in the plate.



**26.** Remove the volar tilt gauge shaft. Remove the volar tilt gauge housing using the hexagonal driver on the screwdriver.



**27.** Insert the beam-screw until it locks into the plate.



**28.** Check the reduction and hardware placement under multiple fluoroscopic views.



**29.** Adjust the proximal fixation in the oblong hole as required.



**30.** Fixation screws are required for optimal distal fixation. If the beam is in use, do not use the fixation hole immediately proximal to the beam. Starting with the distal row, place 2.5mm fixation screws using the 2.0mm drill bit through the drill bit guide (MCG9001) and the guide block. Variable angle fixation will not be required if an anatomic volar tilt is restored.



**31.** Place additional 2.5mm fixation screws in the remaining holes on the guide block using the 2.0mm drill bit.



**32.** Remove the K-wires if still in place.

**33.** Remove the guide block.



**34.** Secure the proximal fragment to the plate using the 2.0mm drill bit and drill bit guide for the 2.5mm screws.

