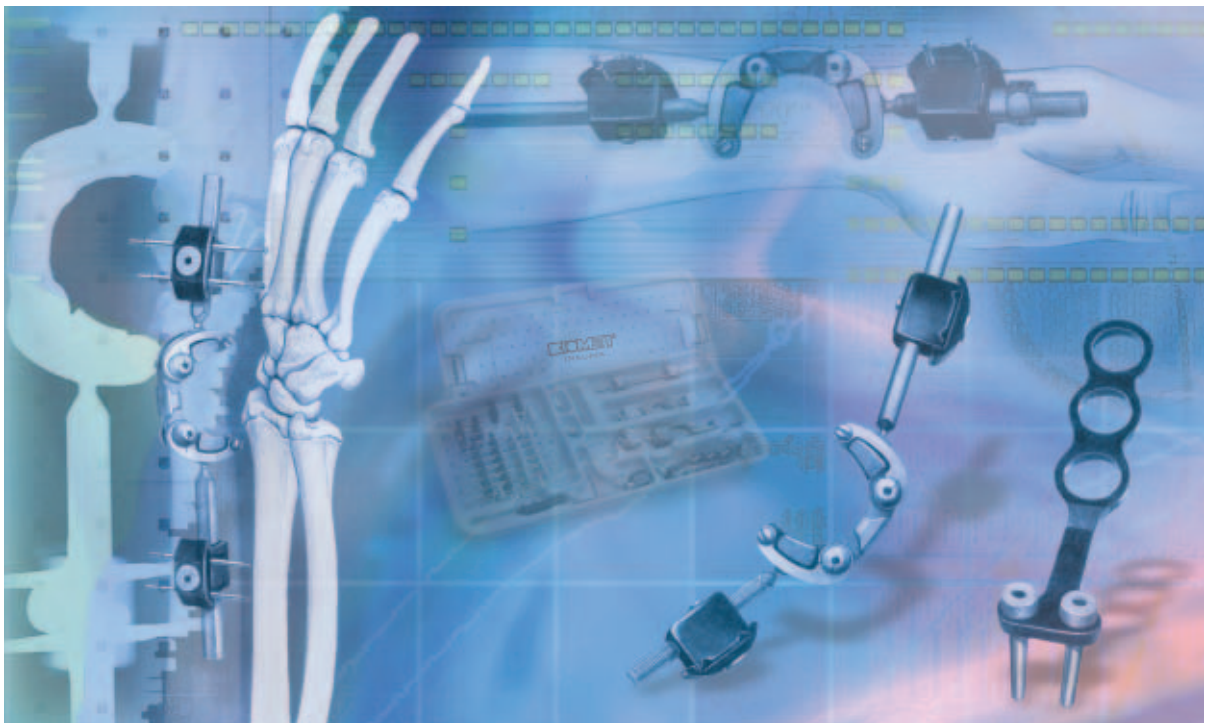
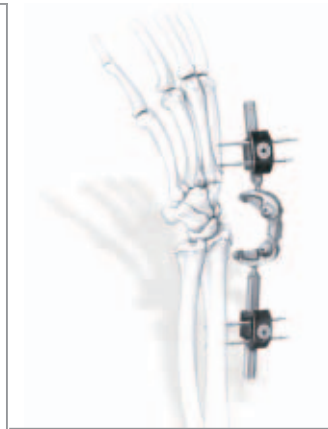


DFS[®] Distal Radius Fixator

Surgical Technique



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Indications

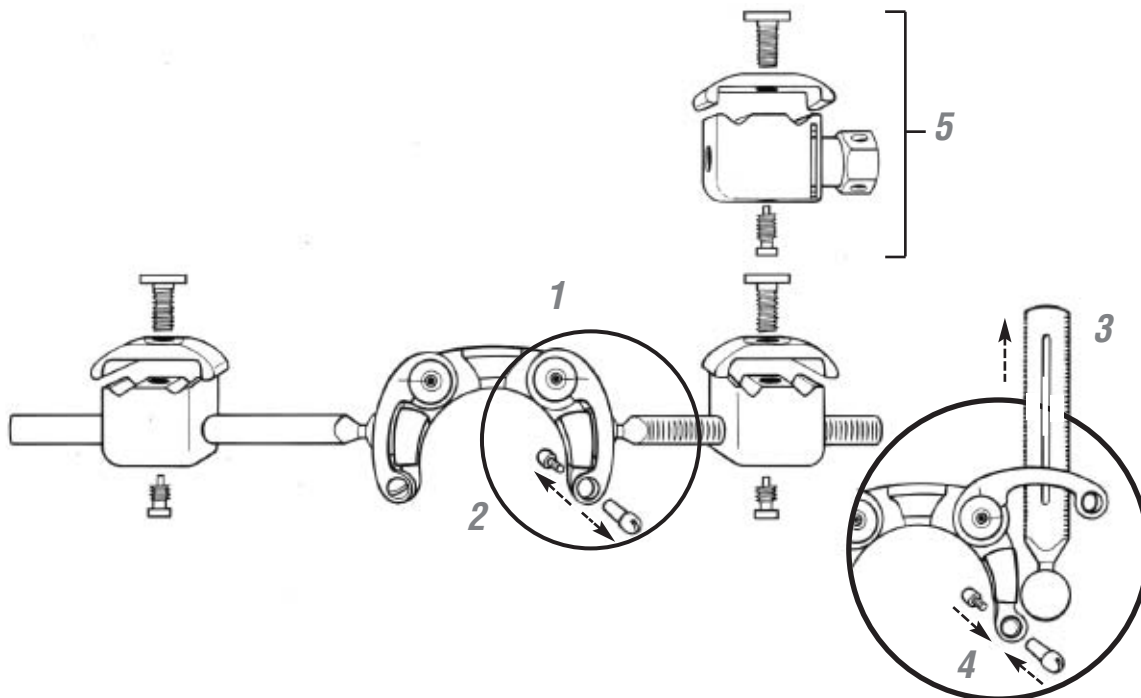
The **DFS** Distal Radius Fixator is intended for use in upper extremity applications for the reduction, alignment, and stabilization of intra-articular and extra-articular fractures, corrective osteotomies and soft tissue deformities.



Fixator Assembly/Disassembly

- 1) The lines on the cam and the central component must be aligned for assembly/disassembly procedure.
- 2) Collet Locking Screws of the central component must be removed to access fixator rail component. *
- 3) Fixator Rail component should be inserted through the locking arm such that the ball is nestled into the spherical recess of the arm.
- 4) Collet Locking Screws are then repositioned and secured.
- 5) (Optional) Bone Screw Clamp with Distraction Module (P/N 04030)

**After use, fixator rail component has been subjected to wear. It is recommended that the fixator components and bone screws not be reused.*



Surgical Technique

Step 1

As with any surgical intervention, preoperative planning is recommended prior to the application of this device. A hand table is utilized. Obtaining a gross preoperative fracture reduction is recommended. The wrist should be positioned to facilitate a frontal/radial surgical approach. Preoperative preparation of the extremity may include shaving of skin surfaces, washing, painting, and draping in routine sterile fashion.

In most instances the fixator is applied to a distal screw cluster in the second metacarpal and to a proximal screw cluster in the mid to distal third portion of the radius.



Obtaining preoperative reduction.



Position for frontal/radial approach.

Surgical Technique (Continued)

Step 2

The orientation of the bone screw will dictate the final position of the fixator.

A longitudinal incision is made at the base of the second metacarpal extending to metacarpal midshaft distally, providing exposure to the soft tissue structures. Additional dissection to bone is required to minimize any impingement of the soft tissue on the bone screws. The first bone screw introduced is the most proximal screw of the distal cluster. It should be inserted at the flare of the tubercle at the base of the second metacarpal. The trocar (P/N 05030) is introduced into the bone screw template (P/N 05025). The template and trocar should be utilized to establish the orientation of the bone screws to the bone. It is recommended that the bone screws are 30° - 45° dorsal to the frontal/radial plane and are perpendicular to the long axis of the bone. The trocar should be used to identify the center of the bone.



Establish first screw position and orientation.

Step 3

Once the center of the bone is located, the trocar is withdrawn and the appropriate drill guide is inserted. The appropriate drill bit is then utilized to penetrate the near cortex. Upon contact with the far cortex, the drill stop is positioned and locked 5mm from the drill guide utilizing the 3mm Allen wrench (P/N 03105). The far cortex is then drilled. The drill stop will prevent over-drilling, thereby avoiding damage to interosseus structures.



Insert appropriate drill guide into bone screw template.



Commence drilling with appropriate drill bit. Use of drill stop will prevent over-penetration.

Surgical Technique (Continued)

Step 4

After bicortical penetration of the drill, the drill bit and the drill guide are withdrawn and the appropriate bone screw is inserted through the bone screw template.

The T-wrench for bone screws (P/N 05005) is used to advance the screw into the bone. To obtain optimal purchase, all screws must be bicortical with no less than two threads protruding beyond the far cortex. Image intensification is utilized to confirm depth of penetration.

*Note: Care must be taken to avoid over-penetration. Due to the tapered thread design, screws **must not be backed out** or they will lose purchase.*

Step 5

With the proximal screw in place within the bone screw template, insert the threaded screw guide into the remaining fitting of the bone screw template. Repeat steps 3 and 4. Remove bone screw template.



Using bone screw T-wrench insert appropriate bone screw. Confirm bicortical purchase with image identification.



Insert threaded screw guide into remaining fitting of bone screw template and repeat steps 2 through 4.

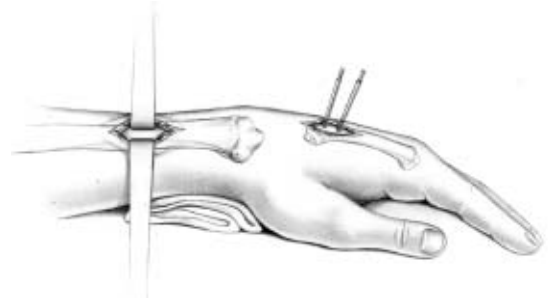
Step 6

To prepare for the insertion of the proximal bone screw cluster, a 3cm incision is utilized to confirm the anatomic location of the superficial branch of the radial nerve and other soft tissue structures. The most distal screw of the proximal screw cluster should be placed no closer than 4cm to the radial styloid.

Step 7

The procedure described for insertion of the metacarpal screws should be repeated for the two radial screws. Image intensification is used to confirm screw position and depth of penetration.

*Note: Care must be taken to avoid over-penetration. Due to the tapered thread design, screws **must not be backed out** or they will lose purchase.*



Identify and expose location of proximal screw cluster.



Repeat steps 2 through 5. Confirm screw depth and position with image identification.

Wound Closure

The fixator assembly is now applied to the bone screws. All fixator fittings are adjusted utilizing the 3mm T-wrench for fixator (P/N 05045). The bone screws are secured by tightening the bone screw clamp cover screw. The clamps are locked 15 - 20mm from the skin.

The clamps and/or distraction module should be positioned to accommodate maximum distraction, i.e. as close to central component as possible.

Position fixator such that the joint space may be visualized through fixator central body upon lateral radiographic evaluation and provisionally tighten proximal cam. When the line on the cam and the line on the central component body are aligned, the cam is loose. The cam is locked by turning in the direction of the etched arrows on the fixator.

The bone screw templates may be placed over the exposed bone screw shanks to aid in manipulation. Once reduction is obtained, the cams and bone screw clamps are locked. If supplemental fixation is desired, K-wires may be utilized. Access to the radial styloid may be obtained with fixator in place. Additional distraction may be achieved with the optional fixator with distraction module (P/N 04102) or bone screw clamp with distraction module (P/N 04030).

Note: To achieve incremental distraction, the fixator rail locking screw must be loosened.



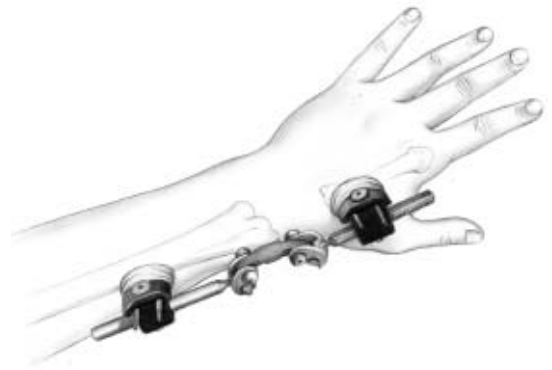
Fixator fittings to be locked at completion of reduction.

Post-Operative Care

At the conclusion of fixator application and fracture reduction, wounds are closed and dressed in routine sterile fashion. Dry sterile gauze is wrapped around the shanks of the bone screws to prevent pistoning of the soft tissue on the bone screws.

Once wounds have healed and sutures are removed, routine post-operative pin site care is recommended.

Screw sites should be monitored during subsequent clinic visits. All fixator fittings should be evaluated for tightness during subsequent clinic visits.



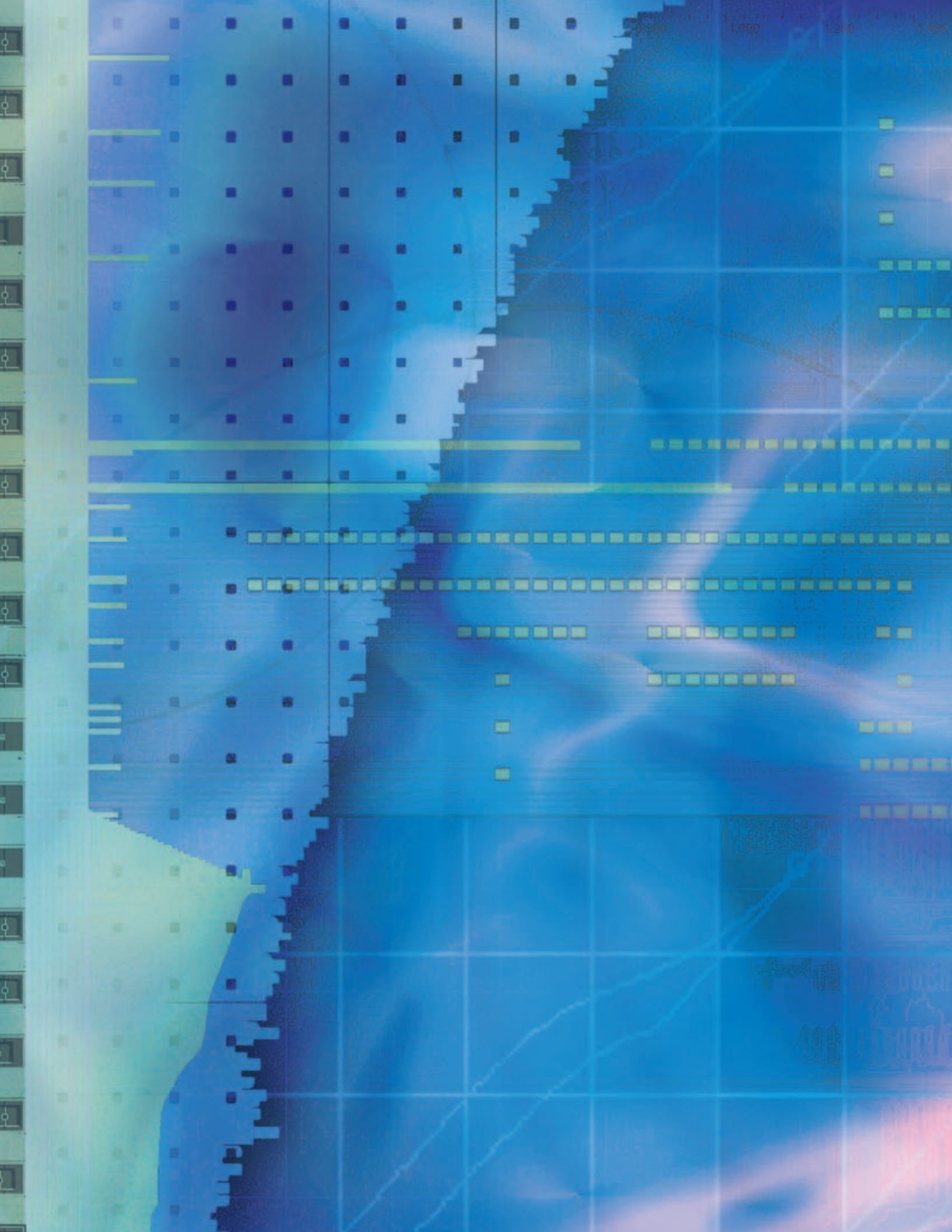
Dry sterile gauze is wrapped around the shanks of the bone screws, to avoid screw/soft tissue positioning.

Additional Information

Biomet, as the manufacturer of this device, does not practice medicine and does not recommend this product or any specific surgical technique for use on any individual patient. The surgeon who performs any implant procedure is responsible for determining the appropriate product(s) and utilizing the appropriate technique(s) for said implantation in each individual patient.

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