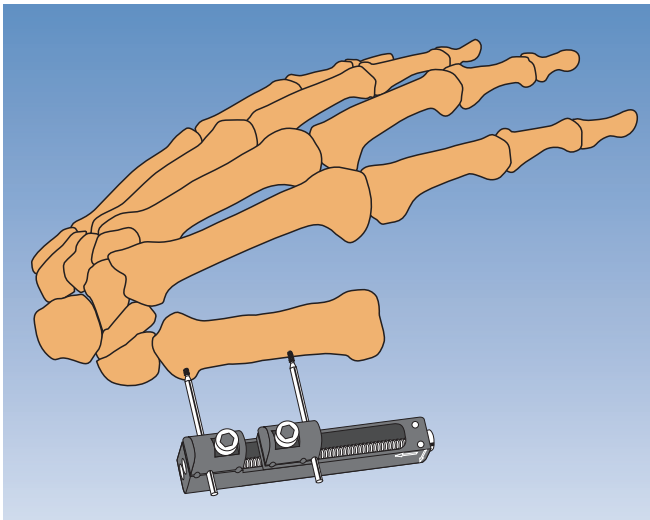


# MiniRail System

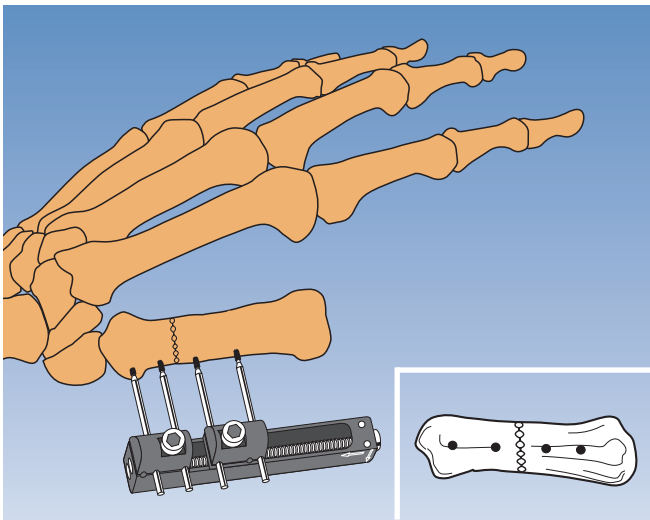
## Part A: Hand Applications

By Dr. L. Cugola, Dr. A. Atzei

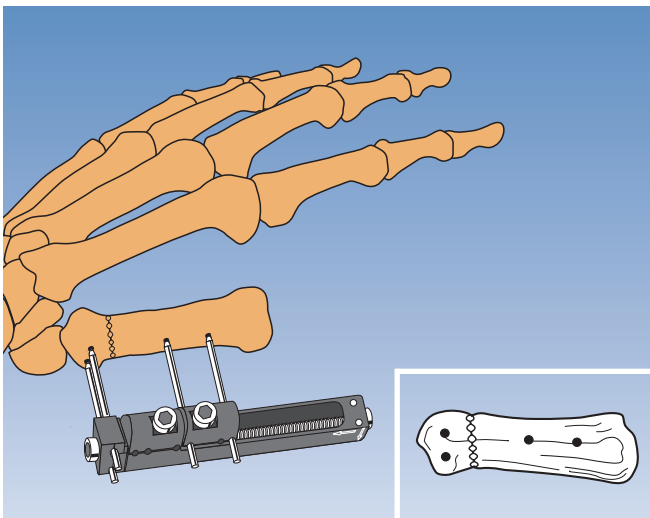


**USE OF M 103 IN LENGTHENING OF THE 1ST METACARPAL**

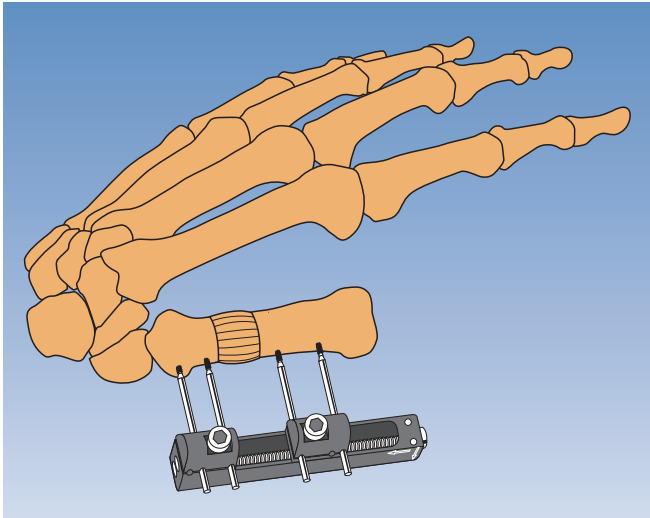
Insert a 2 mm diameter threaded wire (or 3 mm diameter bone screw) in the frontal plane, 90° to the bone axis. Apply the MiniRail Lengthener over the wire (or screw). Insert the second wire (or screw) into one screw seat of the second clamp.



Insert the remaining threaded wires (or screws). Perform a mid-shaft osteotomy.

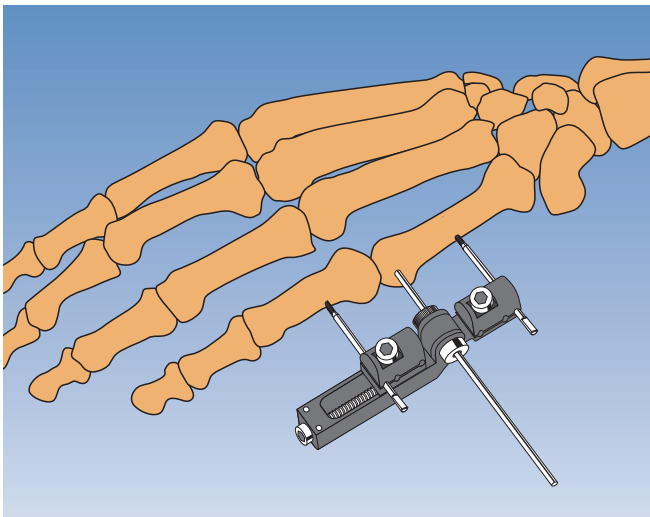


If a metaphyseal osteotomy is performed, use the T-Clamp.



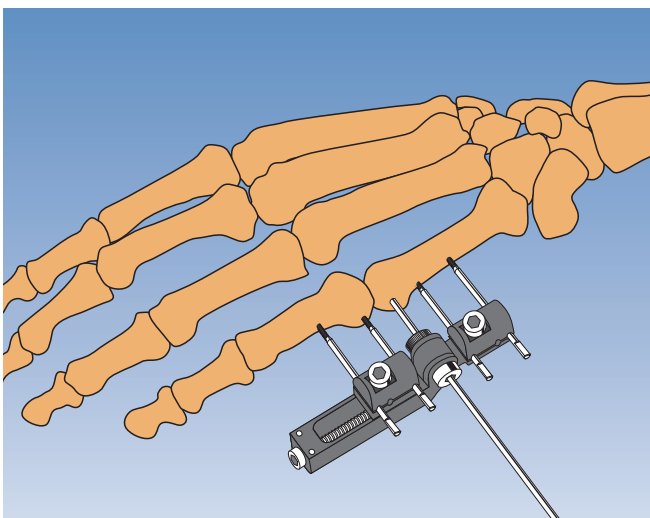
### Post-Operative Management

Wait for 7-10 days before commencing distraction. Distract at a rate of 1 mm per day (one quarter turn clockwise of the threaded screw four times a day). Callus formation should be carefully monitored with standard radiographs weekly.

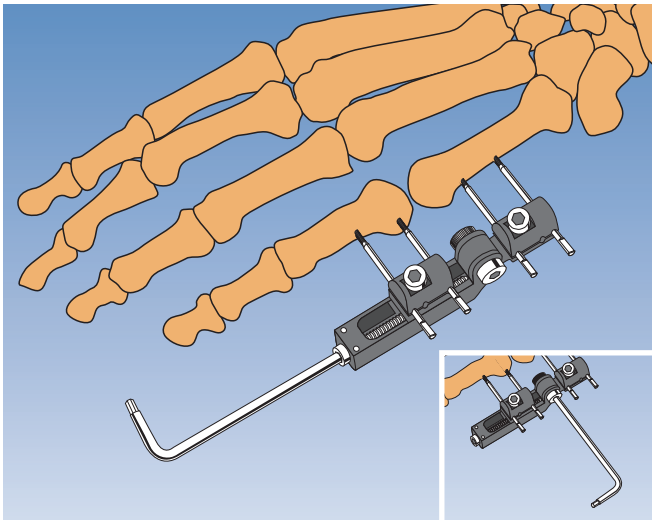


### USE OF M III IN TREATMENT OF JOINT STIFFNESS

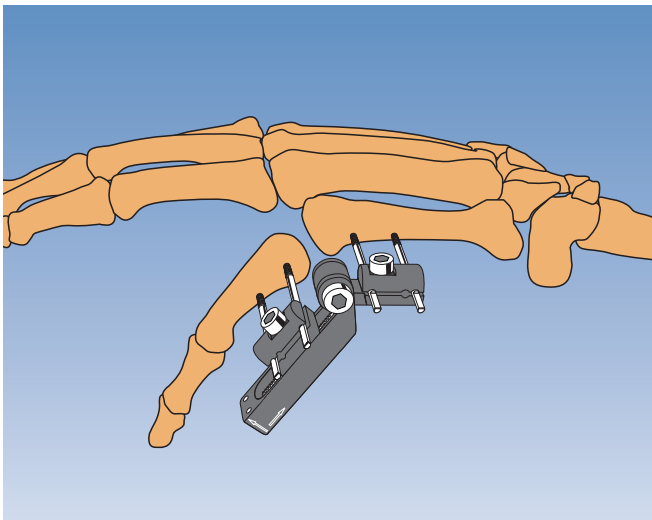
Insert a 1.8 mm Kirschner wire through the centre of rotation of the joint. Apply the MiniRail Fixator over this wire. Insert the first and the second 2 mm diameter threaded wires (or 3 mm diameter bone screws) through the outermost screw seat of each clamp.



Insert the remaining wires (or screws).

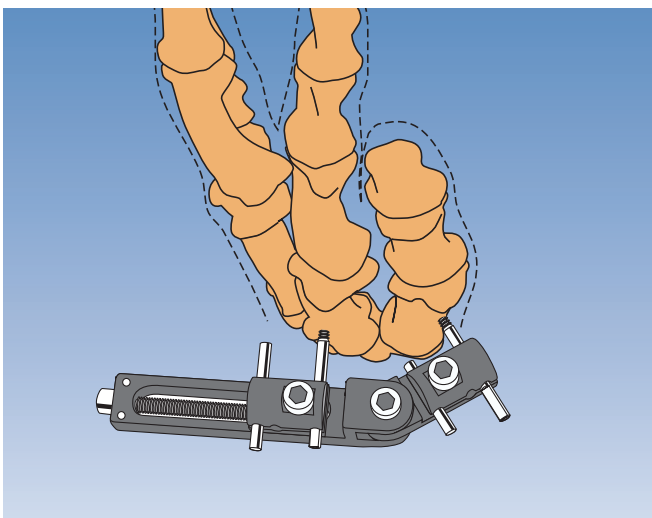


Distract the joint until a joint space two or three times the normal width is obtained (one full turn clockwise of the threaded screw = 1 mm distraction). Remove the Kirschner wire and tighten the articulated body locking screw (inset).



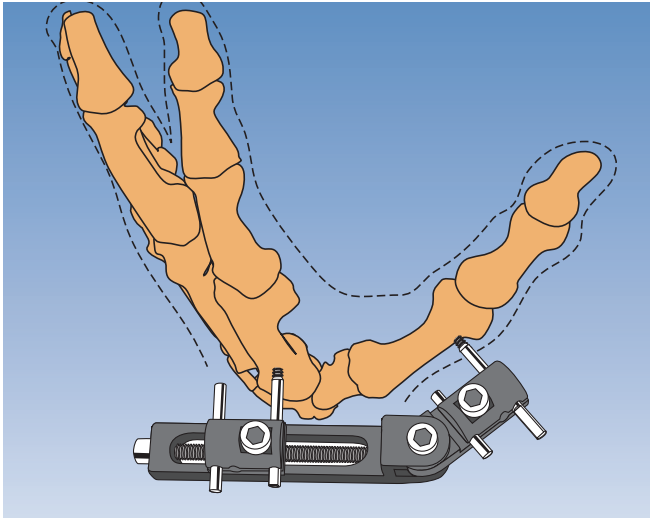
### Post-Operative Management

When the soft tissues have relaxed, 4 to 6 days following surgery, loosen the articulated body locking screw to commence physiotherapy. At the end of an exercise period, place the finger in maximum extension and retighten the articulated body locking screw.



### USE OF M 122 IN SOFT TISSUE CORRECTION

Apply the MiniRail Fixator to the 1st and 2nd metacarpals, with the distraction threaded screw on the ulnar side of the limb. One bone screw in each clamp is sufficient for stability, but the use of an additional dummy screw shaft in each clamp is advisable to ensure uniform tightening of the clamp covers.



Progressively distract the web space and orient the thumb towards the most functional position (usually 20° of abduction and 40° of opposition). In cases with severe neurological impairment of the hand, a two week trial period is advisable to determine the best functional position. Supplementary techniques (arthrodesis of the 1st carpo-metacarpal joint or tenodesis) are usually necessary to maintain the desired position.

Perform arthrodesis of the 1st carpo-metacarpal joint with the fixator in situ: resect the articular surfaces and insert a cancellous bone graft. Minimal internal fixation through the trapezium and 1st metacarpal may be used to maintain the desired position.

The Orthofix Quality System has been certified to be in compliance with the requirements of:

- Medical Devices Directive 93/42/EEC, Annex II - (Full Quality System)
- International Standards ISO 13485 / ISO 9001 for external fixator devices, implants for osteosynthesis and related instruments.



See "Orthofix External Fixation System" instruction leaflet (PQ EXF) prior to use.

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