USE OF M 103 IN LENGTHENING OF THE 1ST METACARPAL

Insert a 2mm diameter threaded wire (or 3mm 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 1mm 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 111 IN TREATMENT OF JOINT STIFFNESS**

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

Insert the remaining wires (or screws).
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.

**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**

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

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