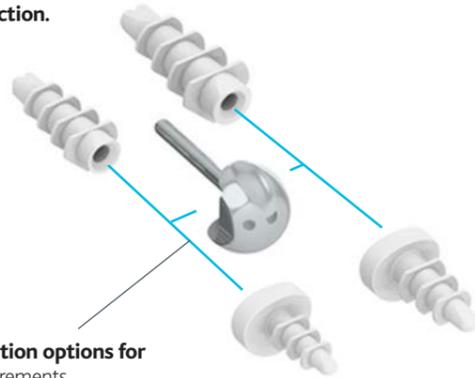


Size range and options

Size range to suit the entire population and all fingers of the hand.

Templating for metacarpal size selection.



Modular design with interchangeable fixation options for individual patient requirements.

Four diameters of metacarpal head.

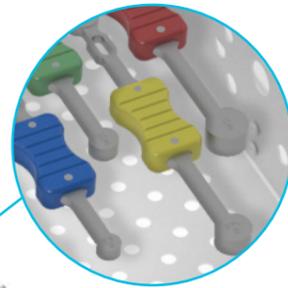
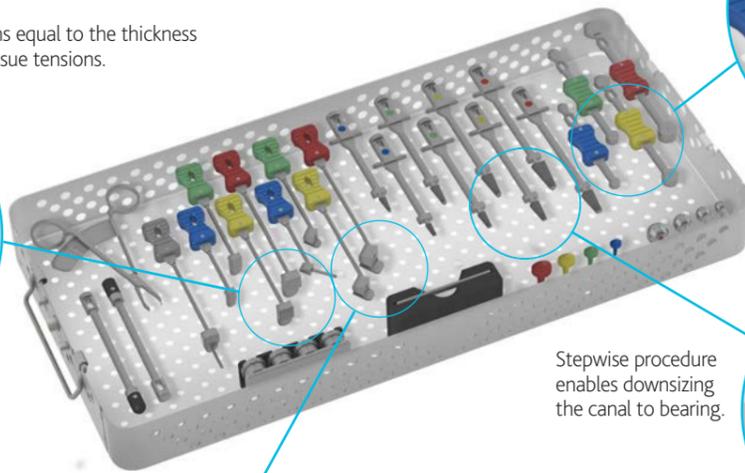


Seven metacarpal plug and proximal phalanx size options for optimum fit with medullary canals.

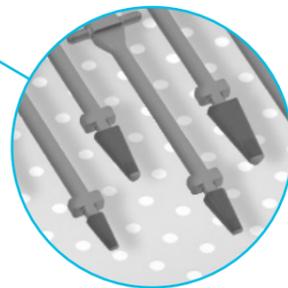
Advanced instrumentation

Fully instrumented procedure with guided preparation for reliable and repeatable surgery.

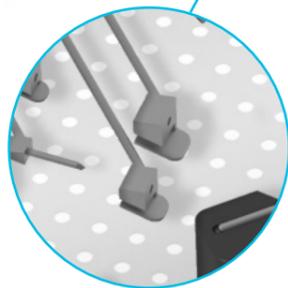
Instruments guide resection depths equal to the thickness of device for restoration of soft tissue tensions.



Precise and easy to use instrumentation includes **ligament balancing tools for controlled joint restoration.**



Stepwise procedure enables downsizing the canal to bearing.

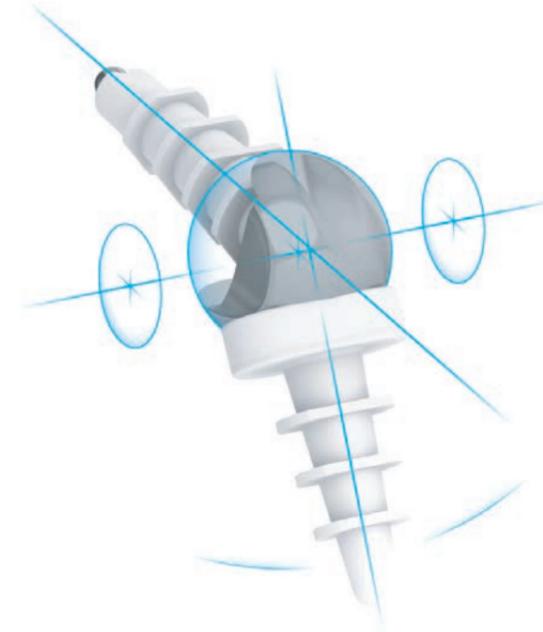


Fully guided cuts aligned to the hand minimise any radial displacement of components.

Single instrument tray system facilitates concurrent fingers per case with an integrated memory block.

Developed with Mr D Harris FRCS, Robert Jones & Agnes Hunt Orthopaedic Hospital, Hand & Upper Limb Unit, Oswestry, UK.

- Harris D and Diaz JJ. J Hand Surg (Br & Eu). 2003; 28B (5): 432-438.
- Blaha JD et al. JBJS-Br. 1982; 64(3):326-35.
- Singh H and Dias JJ. Indian J Plast Surg. 2011; 44(2): 317-26.



TMPR™ Total Metacarpophalangeal Replacement

Product Brochure

Natural Function

TMPR™ Total Metacarpophalangeal Replacement

Anatomical design

Surface replacement of the MCP joint **based on natural anatomy and MRI studies on a spectrum of adult patients** where the shape and position achievable for the components provide reconstruction of near normal anatomy.

Proven CoCr on UHMWPE **ball-and-socket surface replacement.**

Metacarpal head rests on congruent bone surfaces prepared using fully guided saw cuts preventing rotation.

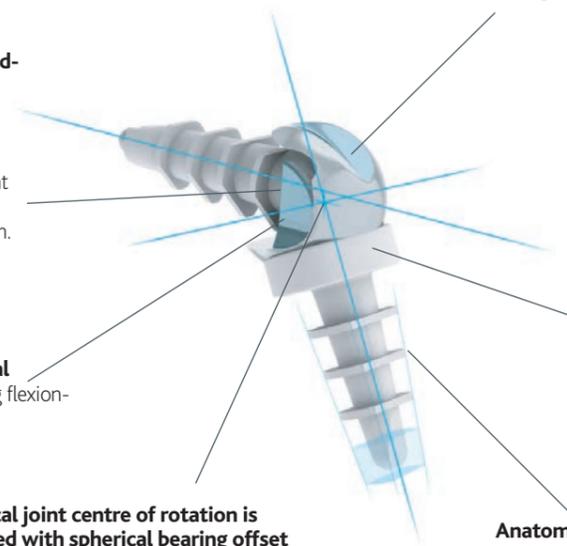
Flared cams protect collateral ligaments from abrasion during flexion-extension.

Anatomical joint centre of rotation is maintained with spherical bearing offset palmar-wards to preserve physiological flexion-extension moment arms.

Dorsal groove for the extensor tendon.

Phalangeal surface flattened dorsally for the extensor hood.

Anatomically shaped fixation profiles conform to the shapes of the medullary canals conserving bone stock.



Secure fixation for longevity

Uncemented interference-fit fixation preserves bone stock and prevents destructive bone loss in case of revision.

Distraction and rotation forces attenuated between the decoupled bearing and fixation interface.



Barb-action fins flex on insertion and spring back to engage the endocortex for immediate secure fixation. The **flexible fins mould to the endosteal bone and protect from mechanical loosening by absorbing lateral stresses.**

Fixation design with over 40 years' clinical heritage where formation of dense bone is usually visible radiographically [2].



Fixation extends to mid-shaft to distribute load.

More normal kinematics

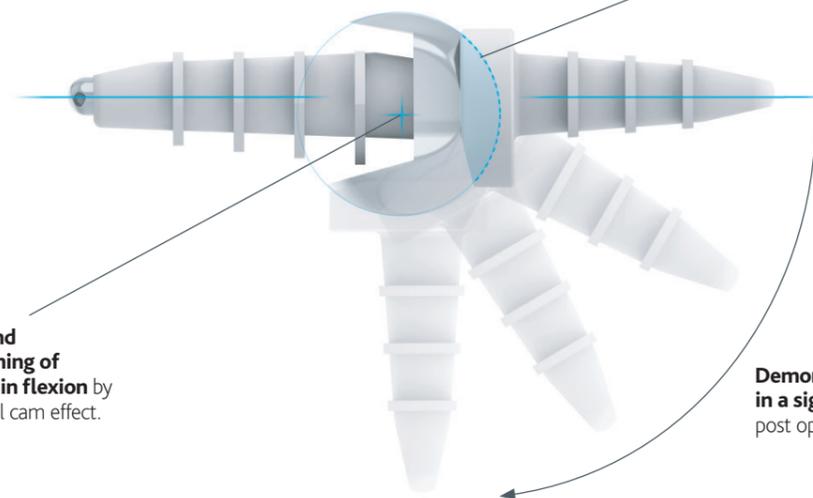
Enables all physiological degrees of freedom with no restriction to flexion, extension, abduction, rotation or distraction.

Ligament balancing for optimum joint restoration.

Full ROM stability and physiological tightening of collateral ligaments in flexion by reproducing the natural cam effect.

Shallow dish surface fully **congruent throughout flexion for low wear.**

Demonstrated to result in a significant increase in post operative ROM [1].



Long-term clinical use

The TMPR™ has been in clinical use since 1994.

It has been shown to reduce pain and restore an arc of flexion from 10° to 70° [1], which is the range required for most daily activities [3]. Pinch and grip strength were also maintained at final follow-up [1].

Dense bone surrounding the device described previously [2] can be observed post-operatively and in a reported series of 13 TMPR™ joints followed up at mean 5 years, no evidence of loosening was found. The same series also showed no signs of wear after 5 years [1].

Patients report near normal flexion, extension and movement at 3 and 5 years and, patient evaluation measure (PEM) scores show improvement from mean 77% pre operatively to 9% at 3 and 5 years post operatively [1].

Intraoperative and postoperative complications are minimal. In a series of 13 TMPR™ devices only one patient had any complication (infection) [1], which was revised with without gross loss of bone stock, and restored, resulting in pain-free active movement.

The TMPR™ is associated with:

- Good pain relief;
- A range of motion required for activities of daily living;
- A strong, stable pinch and grip;
- Patient-perceived restoration of near normal function;
- Minimal intraoperative and postoperative complications.

