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ALIGNMENT

JOINT OPERATIONS ALIGNMENT SOLUTIONS

5



When alignment is good, all other options can be considered







Introduction to Alignment Surgery



Joint preservation surgery aims to improve alignment, stability and the health of cartilage and meniscal tissue; the fundamental biological pillars of the knee.

Restoration of alignment can dramatically reduce the symptoms that patients experience and can increase the longevity of native arthritic knees. The ability to perform a safe and successful osteotomy is therefore an essential tool for the biological knee surgeon.

The indications for osteotomy have expanded in recent years as re-alignment surgery can also be used to augment ligament reconstructions or offload both cartilage procedures and meniscal transplantation.

Mr David Elson FRCS, Orthopaedic Consultant, QEH Gateshead



UKKOR is the United Kingdom registry for knee osteotomies which gathers data from patients undergoing re-alignment osteotomy surgery. Joint Operations actively encourages knee surgeons to participate in the UKKOR registry to help prove the efficacy of re-alignment osteotomy.

www.ukkor.co.uk

Supported by Joint Operations





THE ACTIVMOTION PORTFOLIO

NEWCLIP TECHNICS provides a complete family of osteotomy plates that address the wide variance of patients presenting to clinic.

The range of plates is the most comprehensive available with the unique option of Patient Specific Instrumentation (PSI) which enables the most complex of corrections to be achieved safely with a simple surgical technique.

With an anatomical low-profile design, the results show a lower rate of plate removal due to a reduction in soft tissue irritation. This is achieved whilst maintaining immediate post-operative weight bearing.



NEWCLIP-TECHNICS





Size 1 HTO correction <12mm

Size 2 HTO correction >12mm



Ligamento HTO combined with ACL Reconstruction





Medial DFO Lateral DFO Both adaptable for opening and closing osteotomies



THE ACTIVMOTION HTO PLATE - SIZE 1

Technical features:

- Anatomical low profile design with anterior medial positioning
- Metaphyseal slope adapted to the anatomy
- High strength titanium alloy allows for immediate post-operative weight bearing
- Six locking screws, one with polyaxial alignment
- Ideal for correction up to 12mm opening wedge







- Designed for bi-planar and mono-planar technique
- Available with PSI technique

High Tibial Osteotomy, choose the right plate for the patient



THE ACTIVMOTION HTO PLATE - SIZE 2

Technical features:

- Suitable for all larger corrections and designed to accommodate a bi-planar cut
- Anatomical asymmetrical implant with anterior medial positioning
- Low profile, high-strength implant

Biomechanical comparative study of six different osteosynthesis systems for valgisation of high tibial osteotomy Professor D. Pape



Figure 16: Average relative strength values of Table 6. The TomoFix std group has been taken as reference





"Activmotion provides the best results of all due to its relative higher number of performed loading cycles before failure."



THE ACTIVMOTION HTO PLATE – LIGAMENTO

Technical features:

- Anatomical asymmetrical implant specifically designed for use in combined ACL reconstruction with HTO
- The plate's upper section, anterior to the tunnel, is reinforced for ACL reconstruction
- Six locking screws, including two polyaxial screws to avoid conflicts with the ACL tunnel







POLYAXIAL LOCKING SYSTEM



Possible angulation of the screw before locking (25° locking range) thanks to the DTS[®] system.

Two polyaxial locking holes (DTS[®]) are located in the polyaxial part of the ACL tunnel to avoid damaging the graft.



High Tibial Osteotomy, choose the right plate for the patient



ACTIVMOTION DFO PLATE

The NEWCLIP osteotomy DFO plate comes in two options:

MEDIAL CLOSING WEDGE AND LATERAL OPENING WEDGE OSTEOTOMY PLATES

- Both plates have a low profile anatomical design minimising patient discomfort
- Two offset screw holes each side of the osteotomy site improve mechanical stability
- Oblong hole allows for controlled compression in the medial plate
- Seven monoaxial locking screws and one polyaxial locking screw to protect the intercondylar notch
- Variable angle locking range of 25°





Distal Femoral Osteotomy, choose the right plate for the patient



OPTIONS FOR FILLING THE OSTEOTOMY GAP

PRE-CUT TIBIAL ALLOGRAFT WEDGES



AVAILABLE FREEZE DRIED ALLOGRAFT WEDGES

Description	Height 1 ±0.50mm	Length	Height 2
6° HTO Wedge	7.5mm	35mm min. 50mm max.	3mm min.
8° HTO Wedge	10.0mm		
10° HTO Wedge	12.5mm		
12° HTO Wedge	15.0mm		
14° HTO Wedge	17.5mm		

NHS FEMORAL HEADS



Joint Operations works in partnership with Wrightington, Wigan and Leigh NHS Foundation Trust to provide fresh, frozen femoral heads to UK hospitals.

Harvested with 30 years of best practice



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PATIENT SPECIFIC INSTRUMENTATION FOR OSTEOTOMY

Joint Operations can provide the unique offering of Patient Specific Instrumentation (PSI). This is available with all the HTO and DFO plates within our range.

The PSI option enables the clinician to deliver the highest level of accuracy in both mono-planar and bi-planar procedures. It also enables controlled tibial slope adjustment.

The guide off-loads the hinge through the **golden wire** (pin hole 2), which significantly improves safety when opening the wedge.

Based on the patient's CT scan, the patient specific cutting guide offers an optimal correction of hip knee angle axis and tibial slope.



Drill guide for proximal screws

Cutting guide slot adjustable to saw blade thickness for maximum accuracy

•••• Pin hole

Posterior anatomical brackets

Bi-planar cutting auide slot

Technical features:

Pin Hole 1

Allowing a visual check of the osteotomy direction and location, located 1mm under the cut

Pin Hole 2

Stops the cut before the hinge

The lateral hinge point is calculated 10-11mm from the lateral cortex

Anterior bracket 3

Between the anterior tuberosity and the patellar tendon for accurate positioning

Posterior anatomical brackets 4

Congruent with the tibial surface for accurate positioning

Pin hole



Five week PSI process

Patient selected decision to utilise PSI

> **Provide Joint Operations** with CT scan and long leg weight-bearing x-ray

NEWCLIP

TECHNICS

Complete order form to enable 3D design of the PSI guide

> Sign off 3D PSI guide and patient analysis



Implants, instrumentation and sterile PSI guide.

Ready for surgery

Final preoperative planning performed by the surgeon



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REVIEW OF PROF. M. SNOW PAPER & PROF. D. PAPE PAPER

Clinical reviews

MARTYN SNOW

In this study, 37 patients received a Size 1 Activmotion plate with an acceptable tolerance of correction loss and low rates of soft tissue irritation.

All plates are removed routinely after 12 months - however, only four patients complained of soft tissue irritation.

Activmotion

The plate is anatomically contoured for left and right sides, seated in the anteriormedial aspect of the proximal tibia. The goal is to protect the lateral compartment from increased loads during weight bearing and femoral rollback, following HTO.

Comparison with TomoFix

Its consistent results have made the TomoFix a very popular fixation device for OWHTO with a favourable complication profile [13]. It is however associated with a significant rate of soft tissue irritation which has been reported as high as 40.6% [16].

Conclusion

The fixation plate described in this study, combined with bi-planar open wedge osteotomy, raised no safety concerns with regard to implant related adverse events or loss of initial correction. Early rehabilitation with immediate partial weight bearing was possible and all cases proceeded to osteotomy union with the exception of one case that needed to undergo bone grafting with implant retention. Premature removal of the implant was necessary in four cases due to symptomatic hardware irritation.

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DIETRICH PAPE

Activmotion Size 2

In this study the Activmotion Size 2 plate was compared to the five other most used plates available:

- Contour Lock plate
- iBalance implant
- PEEKPower plate
- TomoFix small
- TomoFix standard

Strength and Reliability

The Activmotion Size 2 plate is among the strongest available, with evidence presented by Dietrich Pape showing the mechanical static and fatigue strength tests of the Activmotion Size 2 plate as stronger or comparable to all other plates tested.

Conclusion

It can be assumed that the TomoFix standard and the PEEKPower plates better conserve correction compared to the iBalance, TomoFix small and Contour Lock implants, but the Activmotion provides the best results of all due to its relatively higher number of performed loading cycles before failure.



ORDERING INFORMATION

The complete alignment solution

The Instrument set is designed for HTO and DFO and includes:

- Radiolucent retractor
- Parallel pin guide
- Opening wedges and osteotomes
- Alignment rod set (upon request)

Products included:

- 2 x each plate
- size 1 HTO
- size 2 HTO
- Ligamento HTO
- Medial DFO
- Lateral DFO
- Screw set from 24mm-95mm
- Allograft bone wedges in 2mm increments (6-14mm)
- Fresh frozen femoral head (upon request)





YOUR JOINT PRESERVATION SPECIALISTS





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BROCHURE REQUESTS



Discover more in the Joint Operations product brochure range:





To find out more, view these options at www.jointoperations.co.uk or ask your JO joint preservation specialist for further details on our joint preservation range.

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