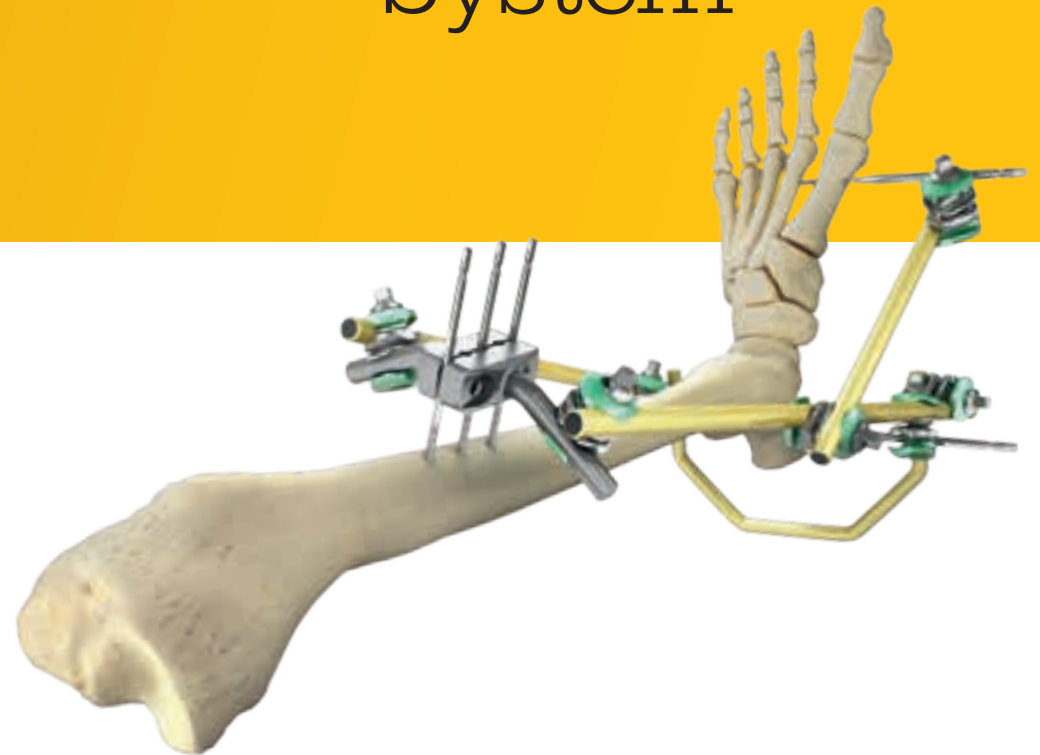


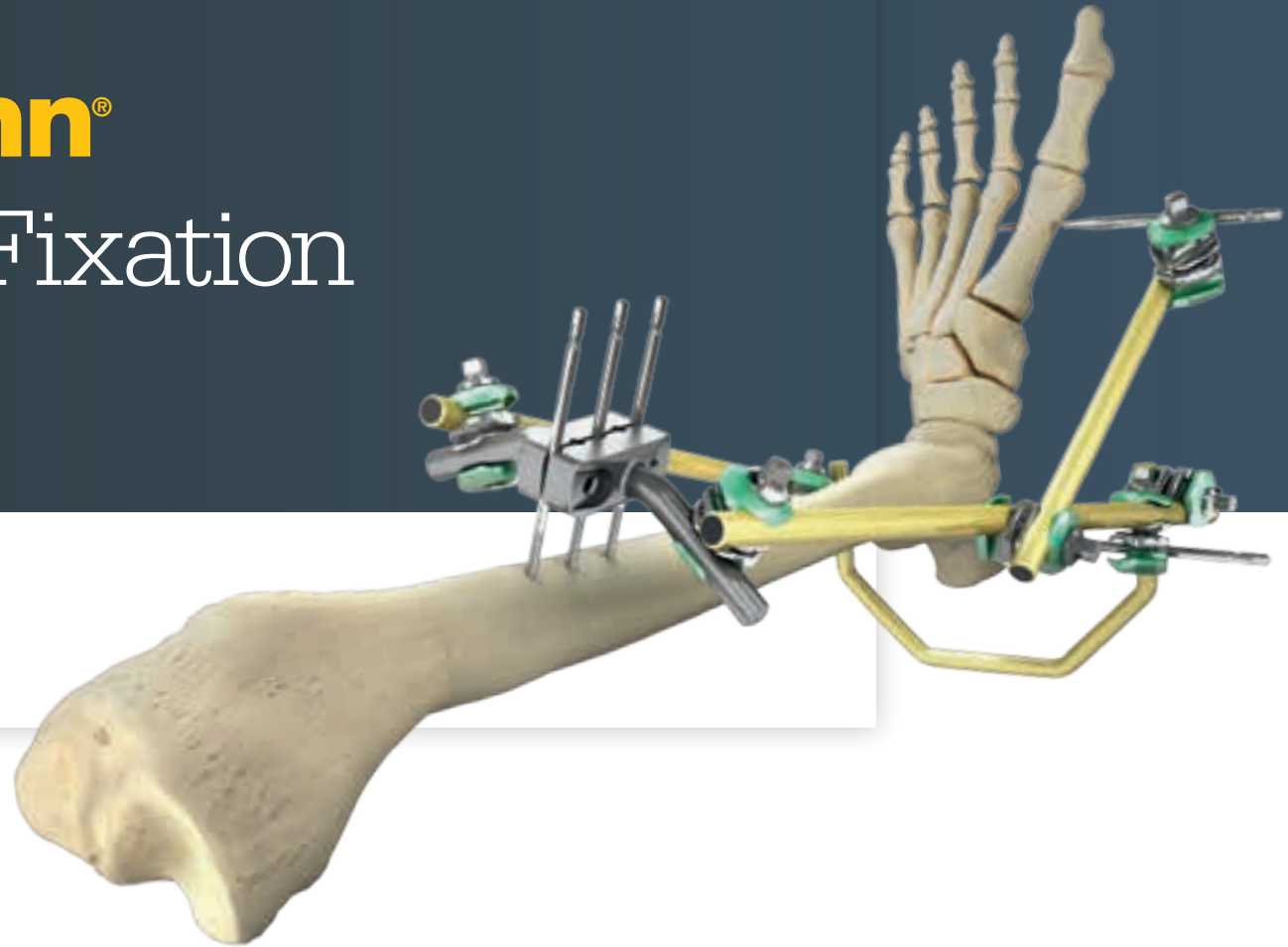
External Fixation System





Hoffmann®

External Fixation



Inspiration and evolution














Only a few decades ago, surgeons frequently needed to perform open surgery to re-set bones in complex fractures. This was painful and could potentially lead to infection or amputation. A young German-born Swiss surgeon identified this clinical need and set about designing a new way to re-set and fix broken bones – without the need for open surgery.

The result was history's first clinically relevant external fixator truly capable of closed reduction, carrying the name of its inspirational inventor: Raoul Hoffmann. Hoffmann's closed reduction technique established the doctrine for minimally invasive orthopedic surgery. The Hoffmann fixator has only continued to improve throughout the years, with advancements in manufacturing and engineering leading to a robust and easy-to-use external fixation platform.

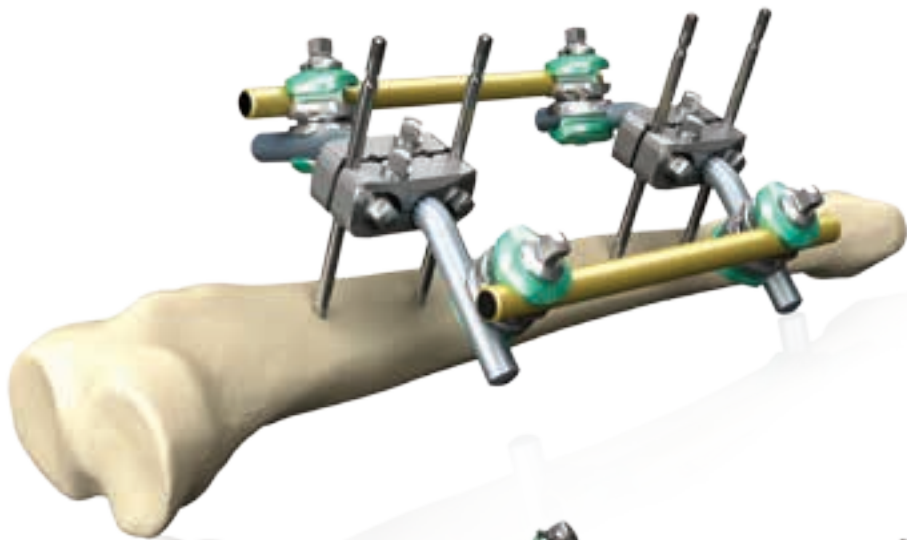
Today's third generation, Hoffmann 3, remains faithful to the ingenuity of its inventor. Comprised of just five key elements, it enables surgeons to create an endless variety of frames for even the most challenging cases. This flexibility in damage control orthopaedics enables efficient response to both high velocity and conventional injuries.

In order to provide a comprehensive external fixation solution, we have continued to evolve with the Hoffmann Limb Reconstruction Frame (LRF). This circular external fixation system offers the same ease-of-use with the added flexibility of wire fixation to take on the most complex limb reconstructions.

Hoffmann fixators have withstood the test of time for more than 75 years with only more innovation to come.

												
1938	1948	1976	1987	1995	1997	1999	2004	2006	2012	2013	2015	2016
Hoffmann patent Dr. Raoul Hoffmann	Hoffmann small	Mini Hoffmann	Self drilling APEX Pins	Hoffmann II	Hoffmann II Compact	Hoffmann Monotube Triax	Hoffmann II Micro DJD	Hoffmann II MRI	Hoffmann 3	Hoffmann LRF	Hoffmann LRF Gradual Correction	Hoffmann LRF Bone Transport

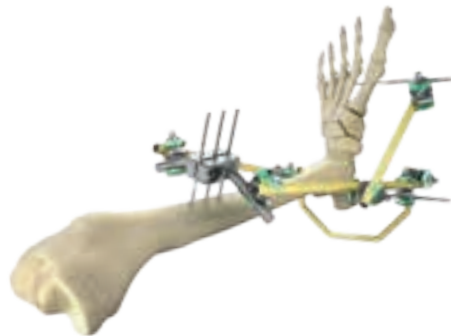
Hoffmann External Fixation



Tibia plateau frame



Pelvis frame



Ankle delta frame

Hoffmann 3 External Fixation

The Hoffmann External Fixation System is a comprehensive stable, smart and simple external fixation platform offering both modular (pin-to-bar) and circular fixation systems to provide a complete external fixation solution.

The system has a long tradition providing solutions not only for patient care in the established environment of Trauma Center Infrastructures but also in extreme situations such as military operations or disaster recovery management around the world.

Hoffmann and the military

The Hoffmann brand has been one of the pioneers in offering sterile packaged external fixation kits and user friendly set configurations that allow fracture treatment or fracture stabilization.

Compatibility

Compatible with Hoffmann II Compact MRI, Hoffmann II MRI and Hoffmann LRF. Can also be used in combination with Hoffmann LRF to build hybrid frames.



MRI conditionality

We offer external fixators which may be used safely in the MRI environment under prescribed conditions.

Hoffmann External Fixation

Hoffmann innovation



Universal pin chuck



Multi-pin clamps



Hybrid pins



30° Rod coupler

Clamp technology

Spring loaded snap-fit technology



Multiplanar delta coupungs



Thumbwheel

Vectron rods



Vectron coated carbon fiber



Semi-circular rods

Apex Pins

The apex pin line offers a wide selection of pins in various lengths and diameters which is essential for the application of any effective external fixator frame.

The system also offers pins coated in hydroxylapatite (HA), one of the few materials that supports bone ingrowth and osteointegration, in a wide variety of sizes and lengths.¹ Titanium pins are also available.



Self-drilling/tapping

Blunt

Cancellous

Transfixing



HA coated blunt

HA coated self-drilling/tapping

Hoffmann External Fixation



Hoffmann 2 MRI

The Hoffmann II MRI system is the predecessor to Hoffmann 3 and offers MR conditional solutions for large ex-fix applications.

- 8mm vectran coated carbon fiber rods
- 5 and 6mm Apex pins
- Patented light-weight and advanced composite materials are designed to be MRI conditional
- Full system modularity, independent pin placement



Hoffmann DJD

Designed to replicate the elbow's axis of rotation, which allows natural mobilization of the joint and may reduce stiffness

- 3 and 4mm Apex pins
- An integrated joint distraction mechanism is designed to bring the joint back to anatomical position
- Compatible with Hoffmann Compact



Hoffmann Compact

The Hoffmann II Compact System offers a variety of joint bridging and non-bridging frames with simple, modular components.

- 5mm vectran coated carbon fiber rods
- 3 and 4mm Apex pins



Hoffmann Monotube

A dynamic axial fixator designed to maintain fracture reduction while allowing the bone to share the load in the axial plane.



Hoffmann Micro

Hoffmann Micro is designed for small bone fractures and is approved for use in children.

- 3mm carbon and stainless rods
- 1.65 and 2mm Apex pins
- 90° multi-pin clamps
- Micro Lengthener can distract up to 30mm



Hoffmann Xpress

- Pre-sterilized kits ready when you need them
- Single use implants and instruments

Section references

1. Moroni, Antonio; Orienti, Luca; Stea, Susanna; Visentin, Manuela. Improvement of the Bone-Pin Interface with Hydroxyapatite Coating: An In Vivo Long-Term Experimental Study. *Journal of Orthopaedic Trauma*. 10(4):236-242, May 1996



Hoffmann LRF

Next generation circular external fixation

Universal component foundation

Based on the long-standing tradition of simplicity of the original Hoffmann Fixator, the Hoffmann LRF design adds new versatility to match today's biological repair and reconstruction methods.

Platform features

- Fewer components designed to reduce frame complexity, assembly time, and weight
- Engineered for greater flexibility and construct versatility compared to Hoffmann Hybrid
- A variety of struts allow for multiplanar gross and fine frame adjustments allowing rapid fracture reduction and precise anatomic re-alignment
- Open frame design facilitates radiographic assessment and surgical site access
- Innovative, time-saving instrumentation





Rings & foot arches

- Rings are available in aluminum and radiolucent carbon fiber reinforced polymer
- Full, open, segment, and short and long foot ring options
- One-piece hinged carbon fiber foot arches allow angular adjustment



Telescopic struts

- Ball joints & quick releases allow multiplanar gross & fine frame adjustment for rapid fracture reduction and precise anatomic re-alignment



Wire fixation

- Built-in grooved stainless steel washer to enhance wire holding power²
- Cannulated wire bolt head reduces overall component weight and accepts counter-torque wire bolt wrench for one-handed tightening
- Wire bolt adaptors allow for capture of wires at oblique angles, offset from the ring



Pin fixation

- One-piece design compatible with 3, 4, 5, & 6mm apex pins
- Adjustable multiplanar fixation options



Rocker shoes

- Independent shoe design allows side-specific height adjustment to compensate for angled distal foot ring
- Anterior and posterior shoe ends feature a 15° slope
- Treaded rubber sole helps improve traction during ambulation



Hoffmann Gradual Correction

Modern telescopic motors and hinged telescopic struts augment the LRF platform for indications requiring gradual corrective adjustments.



Hoffmann Bone Transport

Bone Transport represents the third installment of LRF specialty components, now augmenting the platform to take on segmental loss and limb length discrepancy indications.

With a reduced number of struts and easy-to-access, top-down frame adjustment, LRF Bone Transport is positioned between the classic Ilizarov approach and the more complex two-level hexapod approach.

Section references

2. BML 13-003 Rev.1 BML Report: Esther Wobmann.
Hoffmann LRF wire bolt: Comprehensive report of the tests performed to demonstrate the substantial equivalence with the Smith&Nephew Ilizarov wire bolt. 04 February 2013

Trauma & Extremities

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