1. Pin to Rod Coupling.
2. Rod to Rod Coupling.
3. Pin Clamp.
4. Straight Post
   30 Degree Angled Post.
5. 8mm Connecting Rods Aluminium, Stainless Steel or Carbon Fibre.
7. Dynamization/Distraction Tube for Hoffmann® II.
8. Compression/Distraction Tube for Hoffmann II.
10. Apex® One Step Pins.
The Hoffmann® II External Fixation System provides advanced technology and ease of application, while retaining the values of the Original Hoffmann fixation system.

It was specifically designed to fulfil the needs of today’s surgeon, by keeping in mind ease of use, versatility and patient comfort.

◆ Designed for **independent pin placement** in proximal & distal fractures.
◆ Designed with a **spring-loaded snap-fit** mechanism for improved handling and reduction of intra-operative time.
◆ Designed for **increased fracture visualisation**, by the use of high performance materials - aluminium and carbon fibre.
◆ Designed to provide **optimal stability** and elasticity.
◆ Designed for **compact**, non-bulky frames.
◆ Designed to address fractures in terms of complexity of fracture pattern and soft tissue loss, with **versatility** and ease of use.
◆ Designed with equal or improved mechanical characteristics compared to the Original Hoffmann.
◆ Designed for **compatible** use with the Original Hoffmann Fixation System.
◆ Designed with simple, **effective instrumentation**.
◆ Colour coded components for easy intra-operative management.
◆ Designed to provide **ready access** to soft tissues for better post-operative care.
◆ Designed for improved hospital stock management.
◆ All components have laser engraved catalogue numbers and lot numbers for improved hospital inventory management and traceability.
The Hoffmann® II Pin to Rod Coupling is specifically designed to provide versatile single pin placement, allowing accurate fracture management and strategic pin placement in very distally or very proximally located bone fragments.

◆ Fully adjustable medio-lateral and rotational single pin placement.

◆ Allows full 3 dimensional rotation.

◆ Designed for use with 4mm and 5mm self tapping Apex® pins in order to accommodate various types of fractures, bone quality and frame requirements.

◆ A spring-loaded mechanism allows snap-fit fixation and ensures a firm grip of the fixation pin.

◆ Accepts 8mm stainless steel, aluminium or carbon fibre Hoffmann connecting rods.

◆ Serrated interlocking surface between jaws provides superior rotational locking.

◆ Easy access top locking screw for adjustable control of pin placement.

◆ Colour coded Grey/Blue anodised aluminium components.

◆ Soft and round design avoids the risk of impingement or clinging by the patient.
In order to achieve successful external fixation, a fixator needs to incorporate excellent stability, component flexibility, and ease of use.

The Hoffmann® II Rod to Rod couplings are designed to meet these requirements, by allowing 3 dimensional rotation while guaranteeing a rapid and stable click fixation to the connecting rod.

◆ A spring loaded snap-fit mechanism ensures a firm grip to the connecting rod before tightening. Facilitates rapid mounting of the external fixation connections, while guaranteeing a non-slip connection.

◆ Allows full 3 dimensional rotation.

◆ The radially serrated tooth design between the jaws provides excellent rotational stability and easy and secure locking between connecting rods.

◆ Allows postoperative anatomical corrections.

◆ Compatible with 8mm Hoffmann standard stainless steel rods.

◆ A 7mm square head screw provides easy access locking capability of the component.

◆ A specially designed thumbwheel provides intra-operative adjustment of the frame.

◆ Colour coded Blue/Blue anodised aluminum components.
A successful external fixator needs to be versatile, easy to use and provide superior frame stability in unstable fractures. The Hoffmann® II Pin Clamp incorporates these characteristics and provides compact non-bulky frame solutions through the use of bilateral post connections.

It has multiple half pin or transfixing pin placement possibilities in fractures where superior frame stability is required.

- **5-hole parallel pin placement** allowing the use of 4 or 5mm self-drilling and self-tapping Apex® pins and 6mm blunt Apex pins.
- **Easy access pin locking** mechanism via two 7mm square head screws.
- Bi-lateral star shaped connection allows **12 angular positions** for the 30° angled post with an integrated stop mechanism.
- Lateral locking mechanism for each star shaped connection with self-explanatory symbol.
- Designed for the use of straight or 30 degree curved posts allowing **compact ergonomic frame configurations**.
- Specially designed reduction handles ensure a tight grip on the pin clamp, facilitating **intra-operative reduction** with the pins in situ.
- **Anodised aluminium components.**
The Hoffmann® II Posts have been specifically developed to allow intra-operative flexibility. The system offers a straight or 30 degree curved post enabling compact and versatile frame configurations.

- Special anti rotational star shaped design.
- 12 angular positions.
- Safety ring preventing slippage from the pin clamp.
- Straight or 30 degree Curved Design.
- Integrated stop mechanism in the pin clamp.

**Hoffmann® II Connecting Rods**

Through the use of innovative materials, such as anodised aluminium or carbon fibre, the Hoffmann II External Fixation System has complemented its range of existing stainless steel connecting rods, providing:

- Connecting rods in carbon fibre, anodised aluminium and stainless steel.
- **Complete fracture visualisation** thanks to the use of carbon fibre connecting rods, which permit X-ray visualisation from angles otherwise obstructed by conventional frames.
- **Lightweight** connecting rods (aluminium and carbon fibre) provide additional comfort for the patient and ease of assembly for the surgeon.
- Carbon fibre rods are **disposable**.
- Aluminium rods are lightweight and re-useable.
- The possibility of adapting the external fixation frame to the patient's needs with a wide choice of frame configurations.
- Heavy duty stainless steel for complex fractures requiring maximum stability.
- Available in lengths from 65mm - 500mm.
Elasticity is an important aspect of external fixation. In the past, frame configurations were often very rigid. The Hoffmann® II Dynamization & Distraction Tube has an integrated variable elasticity mechanism allowing postoperative adjustment of the external fixation frame rigidity.

- Adjustable spring mechanism for **variable elasticity**, following the successful philosophy of the Monotube®.
- Degree of **elastic incremental loading** can be controlled by pre-setting the maximum movement of the device from 0-3mm.
- Compression/distraction device with a precise and **easily adjustable** 4.5cm integral lengthening device.
- Specially designed Tube to Rod connections for **secure fixation** to the frame.
- **Simple instrumentation.** The standard Hoffmann T-wrench fits all screws.
- 7mm standard Hoffmann square head screws.
- Laser engraved catalogue number and lot number for improved hospital inventory management and traceability.
The compression of bone fragments in external fixation has remained a vital issue, since an anatomical reduction is often the key to successful healing. With this in mind the Hoffmann® II external fixation system has developed a compression/distraction device that is versatile and easy to use.

◆ 4.5cm of compression and distraction.
◆ **Visible calibration** on the tube.
◆ **Easy access** 7mm square head screw that controls the compression/distraction.
◆ Specially designed Tube to Rod connections for a secure fixation to the frame.
◆ **Simple instrumentation.**
◆ Laser engraved catalogue number and lot number for improved hospital inventory management and traceability.
Elasticity is a concern of External Fixation surgeons, as it is one of the key points leading to fracture healing. When building a Hoffmann II external fixation frame, the surgeon has the possibility of adapting the stiffness of the frame to the fracture by using various materials for the connecting rods, such as carbon, aluminium and stainless steel.

Three point bending tests demonstrated that stainless steel connecting rods provide a high degree of stiffness and are well suited for highly comminuted fractures requiring a high degree of stability.

Aluminium connecting rods have proven to be lightweight and more elastic and allow for semi X-ray transparency.

Carbon fibre connecting rods have a stiffness that lies in between stainless steel and aluminium and have the significant advantage of being lightweight, disposable and X-ray transparent.

This varied choice of connecting rods significantly increases the modularity of the Hoffmann II External Fixation system by allowing surgeon and patient to have an external fixation system that fulfils the needs of today’s healthcare system, while remaining versatile, aesthetic and easy to use.
One of the critical aspects of external fixation is the rotation of components around the connecting rods. This determines the stability of the frame.

In a modern external fixation frame, the possibility of using various degrees of elasticity exists, however it is important to maintain high stability to avoid complications and a loss of fracture reduction.

The Hoffmann® II rod to rod couplings provide superior resistance to rotation through an incorporated anti-rotational design, while allowing connection to various types of rods with varied degrees of elasticity.

Biomechanical testing of the torsion revealed a variation from one connecting rod material to the next, however the minimum performance values recorded always remained superior to the Original Hoffmann external fixation system and significantly superior to other competitive systems using comparable connecting rods.

These and other features of the Hoffmann® II system are trademarks of Howmedica’s quality and design in external fixation.
1. Open the rod to rod couplings until the mechanical stop is achieved to guarantee a proper snap fit of the component.

2. Open the pin to rod couplings until the mechanical stop is achieved to guarantee a proper snap fit of the component.

3. All 7mm square head screws should be positioned facing the outside of the frame to make component locking more accessible.

4. Do not bend the Hoffmann® II 8mm aluminium connecting rods.

5. The Hoffmann II 8mm carbon fibre connecting rods are intended to be disposable.

6. Always use Howmedica external fixation pins in combination with the Hoffmann II external fixation system.

7. When possible face the rod to rod couplings towards the fracture to increase the stability of the frame.

8. Connecting rods should always be kept as short as possible, in order to maximise frame stability.

9. As with all external modular fixators, the frame must be adapted to the weight and fracture configuration of the patient.

10. Multiple re-use of external fixation devices requires periodic material checks. If the components appear scratched or damaged they should be replaced.

11. Before cleaning the rod to rod coupling, the snap-fit mechanism must be opened until the mechanical stop is achieved.

12. Before cleaning the pin to rod coupling the snap-fit mechanism must be opened until the mechanical stop is achieved.

13. Before cleaning the pin clamp assembly, the posts must be removed, and the pin clamp disassembled.
1. **SEMI CIRCULAR FRAME FOR PROXIMAL TIBIA FRACTURES**

Independent pin placement of 5mm Apex® pins in the proximal zone, using the semi-circular rod as a guide. Connect all single pins to the semi-circular aluminium rod using the pin to rod couplings. Classical parallel pin placement of 5mm Apex pins in the tibial diaphysis using a pin clamp assembly and two 30 degree angled posts in an inverted V position. The pin clamp assembly should be used as a guide for parallel pin placement. Connect the pin clamp assembly to the semi-circular aluminium rod using four rod to rod couplings.

2. **UNILATERAL FRAME FOR TIBIAL SHAFT FIXATION**

This frame is used for transverse or short oblique fractures with soft tissue loss. Classical parallel pin placement of 5mm Apex pins in the tibial diaphysis using two pin clamp assemblies and four 30 degree angled posts in an inverted V position. The pin clamp assembly should be used as a guide for pin insertion to guarantee parallel pin placement. Connect the two pin clamp assemblies together using four rod to rod couplings and 8mm connecting rods of the appropriate length and material. The rod to rod couplings should be placed on the inside of the frame, and the connecting rods should be kept as short as possible to increase the stability of the frame. Since precise reduction is not required prior to pin insertion, the frame can be assembled and the final reduction can be performed with the frame in situ before all components are locked.

**Components required:**
1. curved aluminium rod semi-circular
2. 8mm connecting rods (stainless steel, aluminium, or carbon fibre)
3. pin to rod couplings 8/4, 5mm
4. rod to rod couplings 8/8mm
5. pin clamp assembly with no post
6. 30 degree angled posts, stainless steel
7. 5mm One Step Apex® pin
3. INDEPENDENT PIN PLACEMENT FRAME FOR STABLE DISTAL TIBIAL FRACTURES

This frame is recommended in extra-articular fractures and distal tibial fractures close to the joint. It may be associated with internal fixation. Classical parallel pin placement of 5mm pins in the proximal tibial diaphysis using a pin clamp assembly and two 30 degree angled posts in an inverted V position. The pin clamp should be used as a pin insertion guide to guarantee parallel pin placement. Independent pin placement of a 5mm Apex® pin in the medial plane of the distal tibia. Independent pin placement of a 5mm Apex pin in the lateral plane of the distal tibia. Connect the proximal pin clamp assembly to the distal pins using pin to rod couplings and rod to rod couplings as well as connecting rods of appropriate length and material.

Components required:
- 2 8mm connecting rods (stainless steel, aluminium, or carbon fibre)
- 1 pin clamp assembly with no post
- 2 30 degree posts, stainless steel
- 2 rod to rod couplings 8/8mm
- 2 pin to rod couplings 8/4, 5mm
- 4 5mm One Step Apex® pins
4. **UNILATERAL HALF FRAME FOR HUMERAL SHAFT FRACTURES**

Classical parallel pin placement of 4mm Apex® pins in the Humeral diaphysis using two pin clamp assemblies and two 30 degree angled posts in an inverted V position. The pin clamp should be used as a guide for pin insertion to guarantee parallel pin placement. The proximal pins should be positioned in the lateral plane, and the distal pins should be positioned in the lateral or posterior aspect of the Humerus. Connect the two pin clamp assemblies together using two rod to rod couplings and 8mm connecting rods of appropriate length and material. The rod to rod couplings should be placed on the inside of the frame, and the connecting rods should be kept as short as possible to increase the stability of the frame. Since precise reduction is not required prior to pin insertion, the frame can be assembled and the final reduction can be performed with the frame in situ. Once the final reduction is completed, all the components can be locked.

5. **ANKLE STABILISATION FRAME**

Minimal external fixation with possible associated internal fixation for the stabilisation of intra-articular ankle fractures. Independent pin placement of a 5mm Apex pin in the Tibial diaphysis and the Calcaneus. Independent pin placement of a 4mm Apex pin in the first metatarsal. Connect all single pins to 8mm connecting rods using pin to rod couplings. Connect the 8mm rods together using a rod to rod coupling.
6. ANKLE FUSION FRAME

Recommended for ankle fusions or fixation of the ankle. Placement of two parallel 5mm transfixing Apex® pins in the Calcaneus or the Talus. A pin clamp assembly should be used as a pin insertion guide to guarantee parallel pin placement. Two pin clamp assemblies with a 30 degree angled post are placed on either side of the ankle. Classical parallel pin placement of two 5mm Apex pins on the medial aspect of the tibial diaphysis, using a pin clamp assembly and two 30 degree posts.

Connect the pin clamp assemblies together using 4 rod to rod couplings and 8mm connecting rods of appropriate length and material.

Components required:
- 2 8mm connecting rods (stainless steel, aluminium, or carbon fibre)
- 3 pin clamp assembly with no post
- 4 30 degree posts, stainless steel
- 4 rod to rod couplings 8/8mm
- 2 5mm Apex® transfixing pins
- 2 5mm One Step Apex® pins

7. UNILATERAL FRAME FOR FEMORAL FRACTURES

This frame is recommended for polytrauma patients and grade III open fractures in which an exchange procedure to internal fixation cannot be ascertained. Classical parallel pin placement of 5mm Apex pins in the lateral plane of the femoral diaphysis, using two pin clamp assemblies and four 30 degree angled posts in an inverted V position.

The pin clamp assembly should be used as a pin insertion guide to guarantee parallel pin placement. Connect the two pin clamp assemblies together using four rod to rod couplings and 8mm connecting rods of appropriate length and material. The rod to rod couplings should be placed on the inside of the frame, and the connecting rods should be kept as short as possible to increase the stability of the frame.

Since a precise reduction is not required prior to pin insertion, the frame can be assembled and final reduction can be performed with the frame in situ before all components are locked.

Components required:
- 2 8mm connecting rods (stainless steel, aluminium, or carbon fibre)
- 2 pin clamp assemblies with no post
- 4 30 degree angled post, stainless steel
- 4 rod to rod couplings 8/8mm
- 8 5mm One Step Apex® pins
**X-Ray**

**Tibia**

- X-Ray Pre-Op
- Early fixation
- Frame in situ
- Periosteal callus formation

**Comminuted Tibial Pilon Fracture**

- X-Ray Pre-Op
- Pinned fracture
- Frame in situ

**Humeral**

- X-Ray Pre-Op
- X-Ray Post-Op
- X-Ray Post-Op

Hoffmann®
EXTERNAL FIXATION SYSTEM
**Humerus**

X-Ray Pre-Op

X-Ray Post-Op

After removal

**Ankle**

X-Ray Pre-Op

Arthrodesis

Frame in situ

After removal
X-Ray

Ankle

X-Ray Pre-Op

X-Ray Post-Op

After removal

Ankle

X-Ray Pre-Op

X-Ray Post-Op

Frame in situ
**Femur**

X-Ray Pre-Op  
X-Ray Post-Op  
Frame in situ

**Femur Polytrauma**

X-Ray Pre-Op  
X-Ray Post-Op  
Frame in situ  
Callus formed Fixator removed
Catalogue Description

**Number**

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Instruments

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<td>T-Wrench</td>
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Spare Parts

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Stryker®, Hoffmann®, Hoffmann® II, Apex®, Monotube®, Triax™, Compact™ and Tenxor™ are trademarks of Stryker Corporation.

Unilateral frame system designed to handle a wide variety of fractures and limb-lengthening applications. This simple, colour-coded system offers both dynamic and carbon tubes for individualised performance and economy. True simplicity, versatility, and economy.

Modular frames which allow for true independent pin placement. Completely compatible with Original Hoffmann® components, this new system improves flexibility and ease-of-use, while enhancing frame economics through minimal componentry. It’s external fixation with a “snap.”

Designed to complement the anatomy of the distal radius by allowing independent movement of its clamps in multiple planes. Standard unilateral or bi-lateral bridging frames for intra-articular fractures and peri-articular non-bridging frames for extra-articular fractures. Fully compatible with the Hoffmann® II System, based on a spring-loaded snap-fit mechanism that improves flexibility and ease-of-use.

The DJD II is a Dynamic Elbow Joint Distractor. Fully compatible with the Hoffmann® II Compact™ System, it is designed to treat post-traumatic elbow stiffness as well as acute elbow trauma cases.

The Tenxor™ System is a hybrid system providing advanced technology and ease of application. Fully compatible with Hoffmann® II and Monotube® Triax™, based on a spring-loaded, snap-fit mechanism that improves flexibility and ease of use.

Every Fixator incorporates the high quality pin-to-bone interface provided by Apex® Pins. The Apex® Pin cuts more sharply with less torque, friction and heat upon insertion improving purchase while minimising the risk of pin tract problems. Available in self-drilling and blunt tip designs, only from Stryker® Howmedica Osteonics!