

# Hoffmann<sup>®</sup>II

EXTERNAL FIXATION SYSTEM

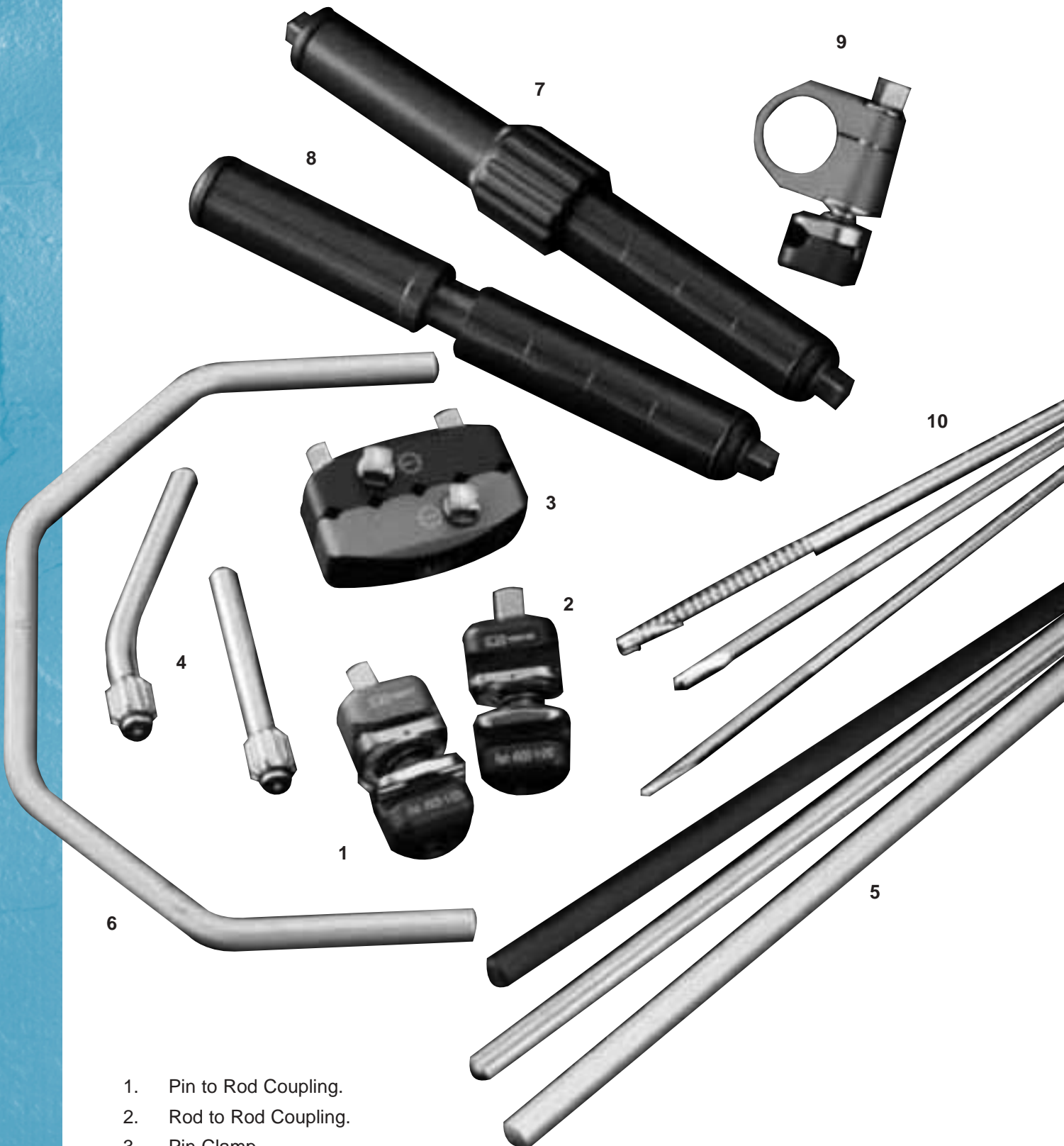
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EXTERNAL FIXATION SYSTEM

TECHNICAL GUIDE



stryker<sup>®</sup> Trauma



- |  |   |
|--|---|
| 1. Pin to Rod Coupling.  | 8. Compression/Distracton Rod for Hoffmann II.  |
| 2. Rod to Rod Coupling.  | 9. Dynamisation/Distracton Rod to Rod Coupling. |
| 3. Pin Clamp.  | 10. Apex <sup>®</sup> One Step Pins.            |
| 4. Straight Post<br>30 Degree Angled Post.                         |   |
| 5. 8mm Connecting Rods Aluminium, Stainless Steel or Carbon Fibre. |   |
| 6. Semi-Circular Aluminium Connecting Rods.                        |   |
| 7. Dynamisation/Distracton Rod for Hoffmann <sup>®</sup> II.       |   |

# Introduction

Hoffmann® II is a second generation modular external fixation system, offering advanced technology and ease of application, while retaining the values of the Original Hoffmann® External Fixation System.

Major improvements in materials and function make Hoffmann II the preferred modular external fixation system. New Clamp designs offer true independent pin placement, with a unique snap-fit mechanism eliminating the need to pre-assemble components. Because of the snap-fit design, components may be added to the frame at any time without having to dismantle the frame and risk the loss of reduction.

In addition to a new Clamp design, enhanced materials have been used to fashion the Clamps and Connecting Rods. Clamps are made of aluminium alloy, significantly reducing overall frame weight, without compromising stability. Connecting Rods are available in Stainless Steel, Carbon, and Aluminium allowing for various types of elasticity.

Hoffmann II is fully compatible with the Monotube® Triax™ Fixation System and Monticelli-Spinelli™ Circular Fixator Systems. When using Hoffmann II with these systems, please refer to Stryker® Howmedica's Technical Guides for the Monotube and Monticelli-Spinelli External Fixation Systems.

## Indications

Treatment of appropriate skeletal fractures.

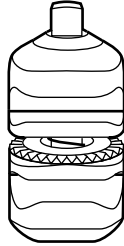
- ◆ Long bone fractures (including peri-articular)
- ◆ Humerus
- ◆ Tibia
- ◆ Femur
- ◆ Other long bones in selected cases
- ◆ Pelvic fractures
- ◆ Osteotomies.

## Contraindications

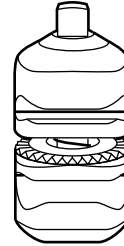
- ◆ If uncertainty exists with regard to the anatomic location of the neurovascular structures due to post-traumatic destruction, the device should be used with extreme caution. Under these circumstances, the pins should be inserted under direct vision.
- ◆ The presence of extensive internal fracture fixation devices.
- ◆ Pre-emptive medical condition.

This publication sets forth detailed recommended procedures for using Stryker® Howmedica devices and instruments. It offers guidance that you should heed, but, as with any such technical guide, each surgeon must consider the particular needs of each patient and make appropriate adjustments when and as required.

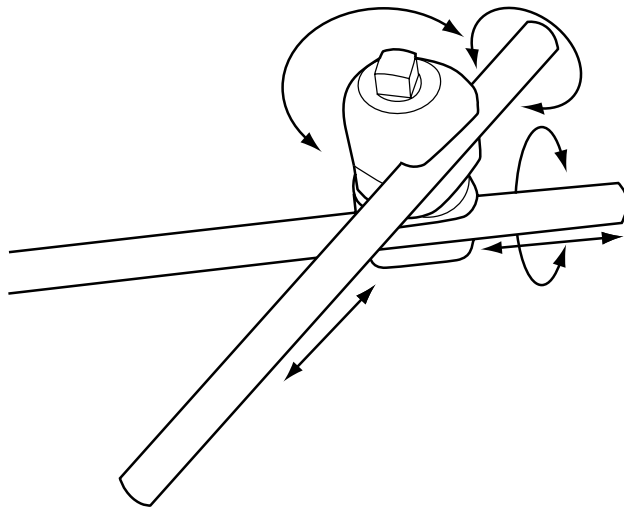




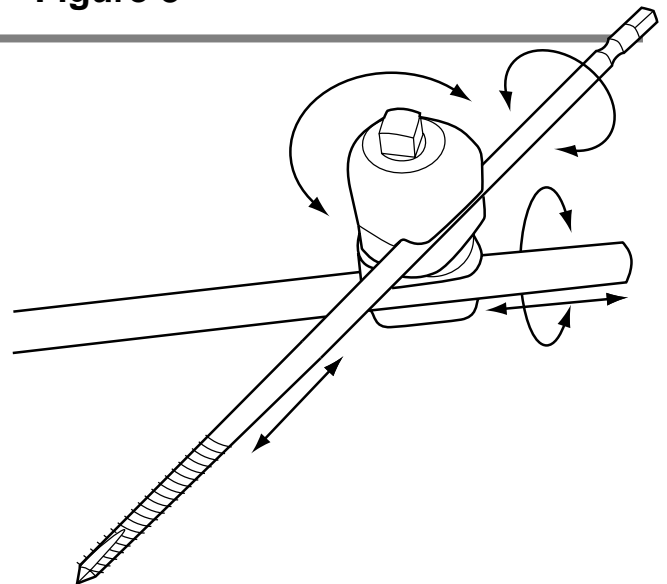
**Figure 1**



**Figure 3**



**Figure 2**



**Figure 4**

### *Rod-to-Rod Clamps*

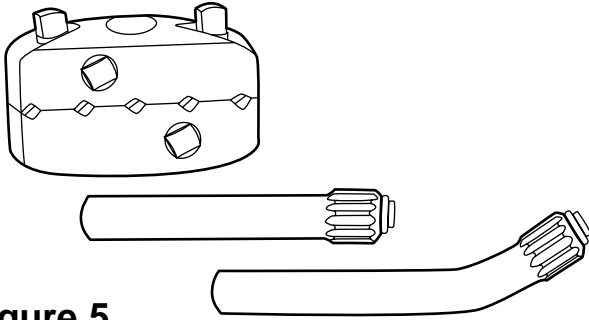
Provide maximum stability, component flexibility and ease of use. The Rod-to-Rod Clamp allows three dimensional rotation, incorporating a non-slip, snap-fit design that facilitates rapid assembly of the frame. The Clamp snaps onto the 8mm Connecting Rod and is locked in place with the 7mm Square Head Screw (Figures 1 and 2). Rod-to-Rod Clamps are colour-coded blue/blue.

### *Pin-to-Rod Clamps*

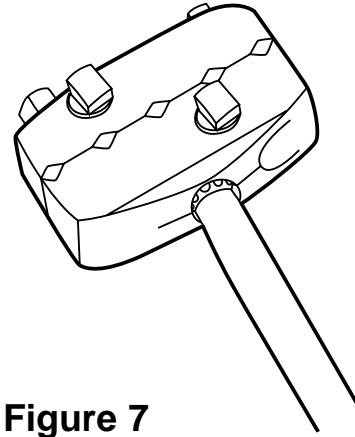
Like the Rod-to-Rod Clamp, the Pin-to-Rod Clamp provides maximum stability, flexibility, and ease of use.

The Pin-to-Rod Clamp employs the same non-slip, snap-fit design to clamp onto 8mm Connecting Rods and 4mm or 5mm Apex® Half Pins.

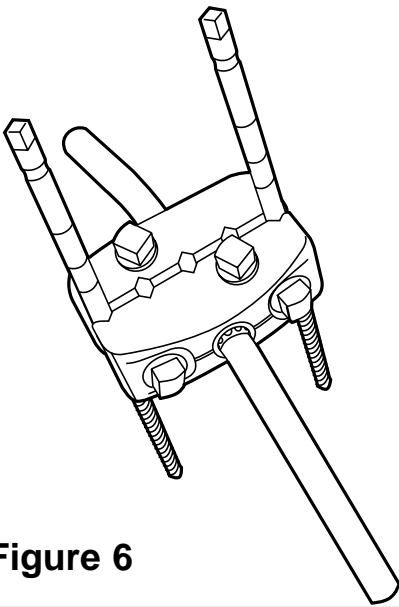
Pin-to-Rod Clamps are colour-coded blue/grey (Figures 3 and 4).



**Figure 5**



**Figure 7**



**Figure 6**

## *Multi-Pin Clamp*

Multi-Pin Clamps are available if parallel Pin placement is desired. The Clamp will hold up to five Self-Drilling 4mm, 5mm, or 6mm Apex® Half Pins.

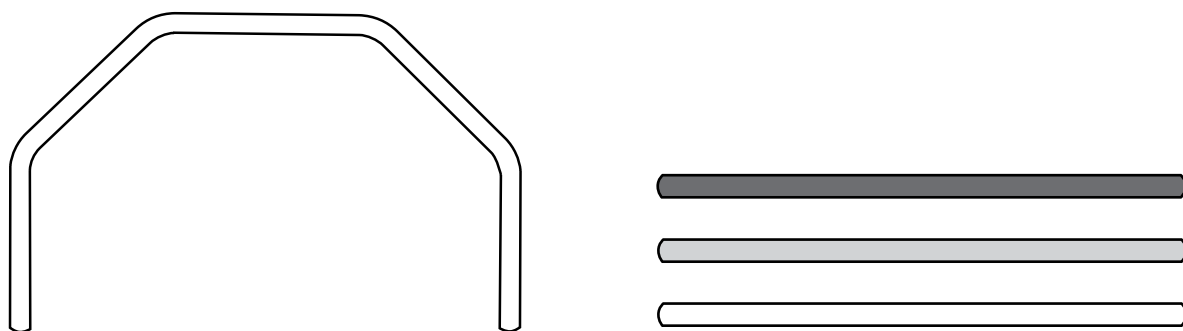
Straight or 30° Angled Blunt Posts are used along with the Clamp to provide attachment to the Rod-to-Rod Clamps and Connecting Rods.

The 30° Angled Post may be located in many positions within the Multi-Pin Clamp to provide a more compact, fracture-specific frame (Figure 5).

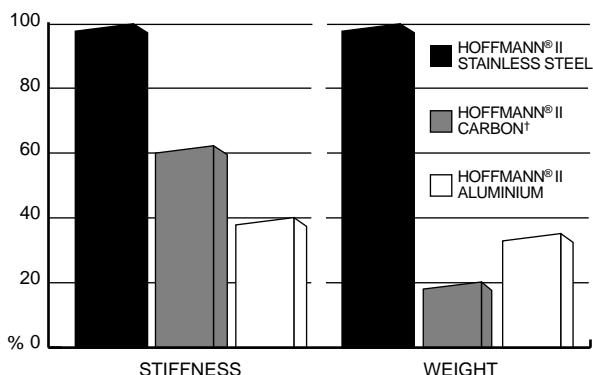
Posts are locked into place by tightening the two 7mm Square Head Screws on the anterior face of the Clamp (Figure 6).

Multi-Pin Clamps are secured to Half Pins by tightening the two 7mm Square Head Screws on the lateral side of the Clamp (Figure 7). Like other Pin-to-Rod Clamps, Multi-Pin Clamps are colour-coded blue/grey.

**NOTE:** Do not mix Pin diameters within the same Clamp. Half Pins used within the same Clamp must have the same diameter.



**Figure 8**



Characteristic comparisons between Hoffmann® II 8mm diameter Carbon, Aluminum and Stainless Steel Rods.

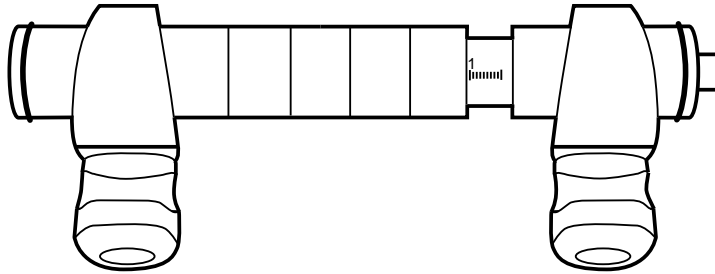
**Figure 9**

## *Connecting Rods*

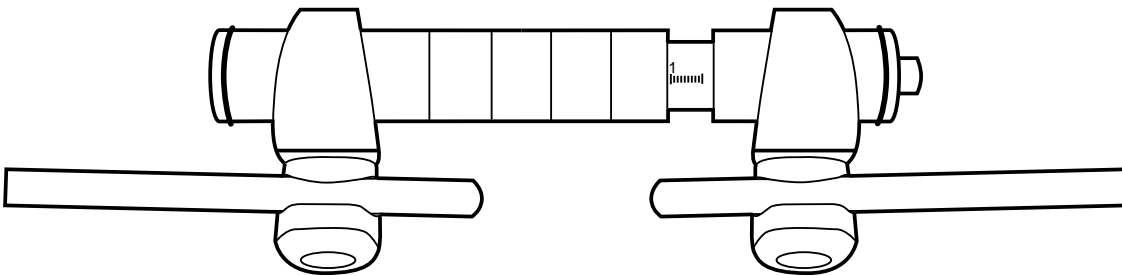
Straight Connecting Rods are available in Stainless Steel, Carbon, and Aluminium. All Rods are 8mm in diameter, and range in length from 65mm to 500mm in 50mm increments. A unique Curved Aluminium Rod is also available in three sizes, providing even wider options of frame constructs (Figure 8).

Stainless Steel, Carbon, and Aluminium Connecting Rods provide varying degrees of frame elasticity allowing the surgeon to adapt the external fixation frame to the patients fracture needs (elasticity, transparency) (Figure 9).

**Note:** Do not bend the Carbon or Aluminium Connecting Rods.



**Figure 10**



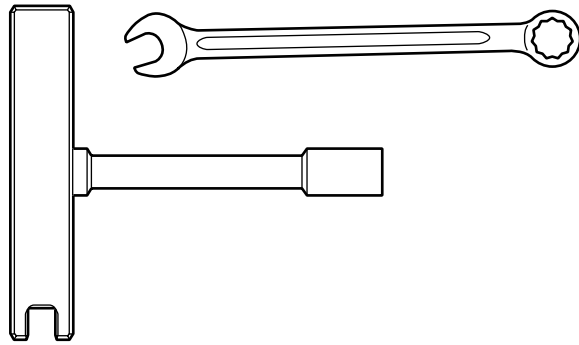
**Figure 11**

## *Compression/ Distriction Tube*

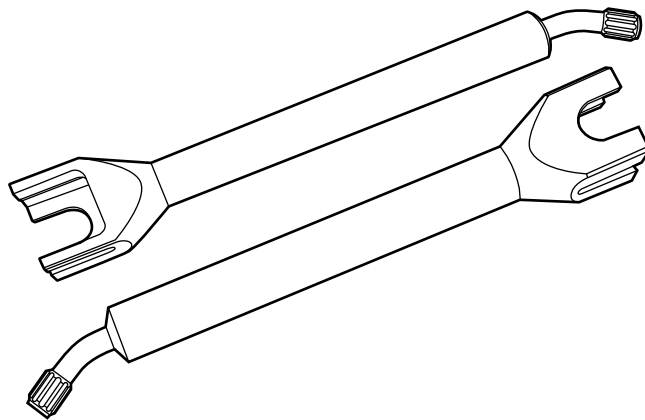
The Compression/Distriction Tube may be incorporated into the frame to provide fine adjustments in the fracture reduction (Figure 10). The C/D Tube may be distracted to a maximum of 4.5cm. One complete revolution of the 7mm Square Head Screw equals one millimetre displacement. Turn anti clockwise for Distriction and clockwise for Compression.

## *Rod-to-Tube Clamps*

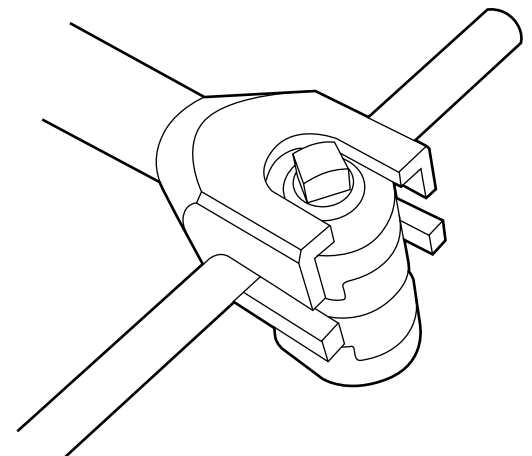
These Clamps are used to connect the Compression/Distriction Tube to 8mm Connecting Rods or Multi-pin Clamp Posts. The Rod-to-Tube Clamps employ the same no-slip, snap-fit mechanism as the Pin-to-Rod and Rod-to-Rod Clamps (Figure 11).



**Figure 12**



**Figure 13**



**Figure 14**

## *7mm Wrench*

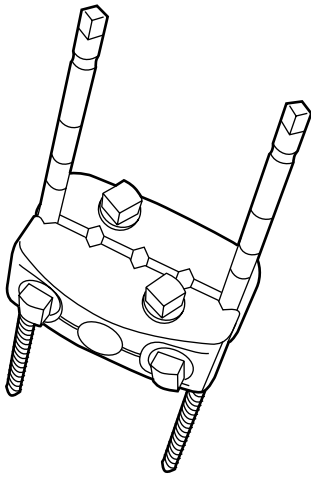
Hoffmann® II uses the same 7mm Spanner and T-Handle Wrenches provided with the Original Hoffmann® (Figure 12).

## *Stabilisation/Reduction Wrench*

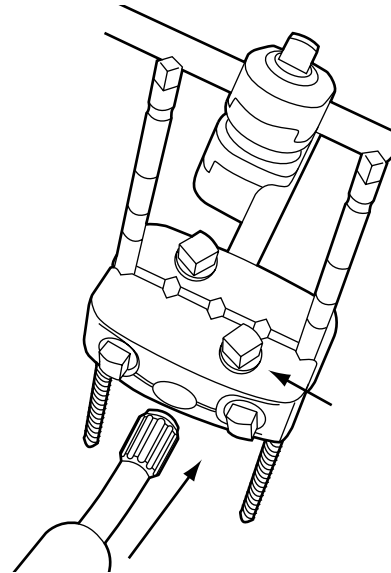
This wrench is used to hold the Rod-to-Rod and Pin-to-Rod Clamps during tightening, and is used in conjunction with the Multi-Pin Clamps as a fracture reduction tool (Figure 13).

Using the open end of the Wrench, slide it over the Clamp and hold it steady while tightening the Clamp with the 7mm Spanner or T-Handle Wrench (Figure 14).

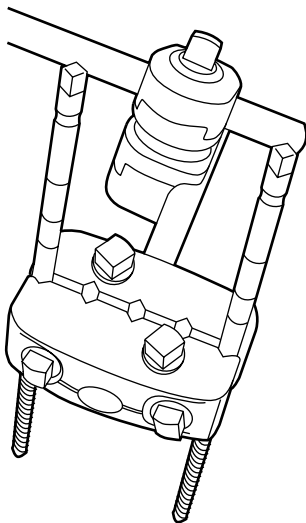




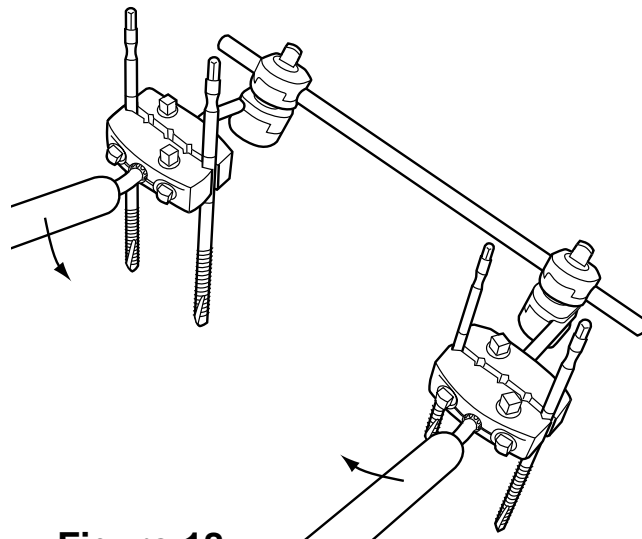
**Figure 15**



**Figure 17**

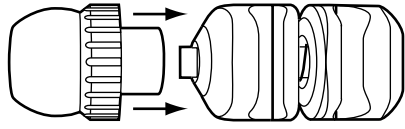


**Figure 16**

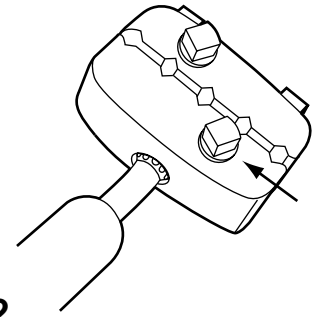


**Figure 18**

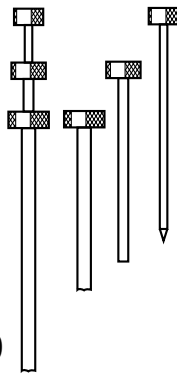
To use as a reduction tool, Apex® Half Pins and the Multi-Pin Clamps are put in place (Figure 15). Medially, build the frame, but leave all components loose (Figure 16). Insert the Stabilisation/Reduction Wrench (Figure 17) in the post hole and reduce the fracture, tighten all medial components (Figure 18). Remove Wrenches and assemble frame laterally. Finally tighten all the components.



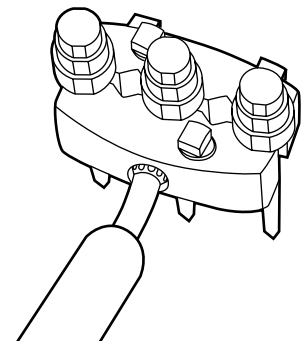
**Figure 19**



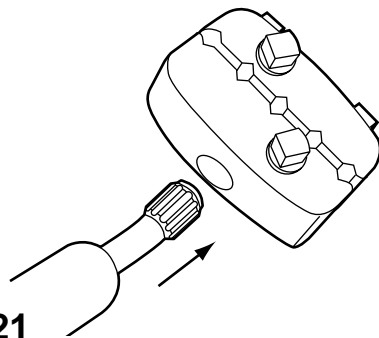
**Figure 22**



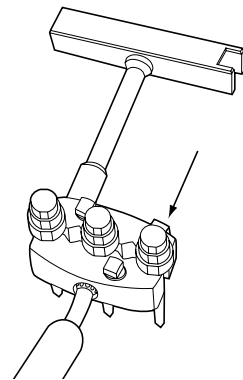
**Figure 20**



**Figure 23**



**Figure 21**



**Figure 24**

## *Thumbwheels*

The Thumbwheels fit the 7mm Square Head Screw to facilitate finger tightening of the clamps (Figure 19).

## *Drill Guides*

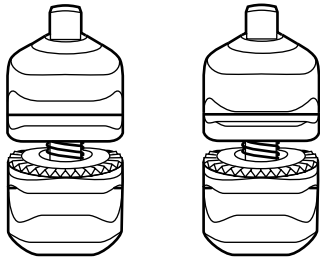
The Original Hoffmann® 4mm and 5mm Drill Guides are compatible with Hoffmann® II (Figure 20).

## *Drill Guide for Multi-Pin Clamp*

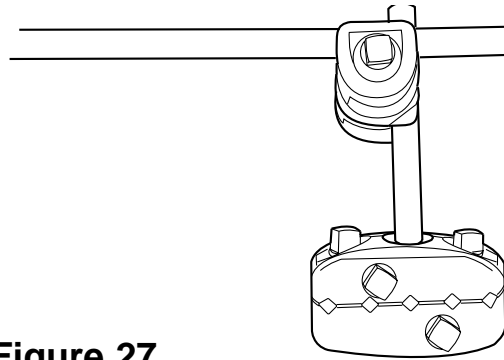
When placing Pins parallel for the Multi-Pin Clamp, insert a Stabilisation/Reduction Wrench into the post hole opposite the Half Pin Tightening Screw (Figure 21). Secure the Clamp to the Wrench by tightening the Post Hole Screw (Figure 22). Load up to three Original Hoffmann Predrill Assemblies into the Multi-Pin Clamp (Figure 23). Tighten the Multi-Pin Clamp to the Sleeves with both Half Pin Tightening Screws. (Figure 24). Drill/Pin insertion can now be completed.

**NOTE:** Do not mix pin diameters within the same clamp. Half pins used within the same clamp must have the same diameter.

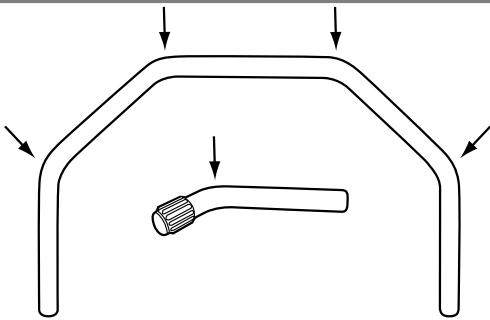
# Frame Applications



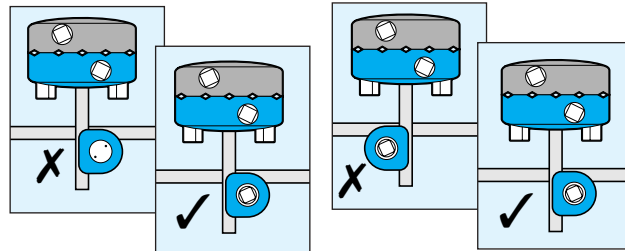
**Figure 25**



**Figure 27**



**Figure 26**



**Clamp Connection**

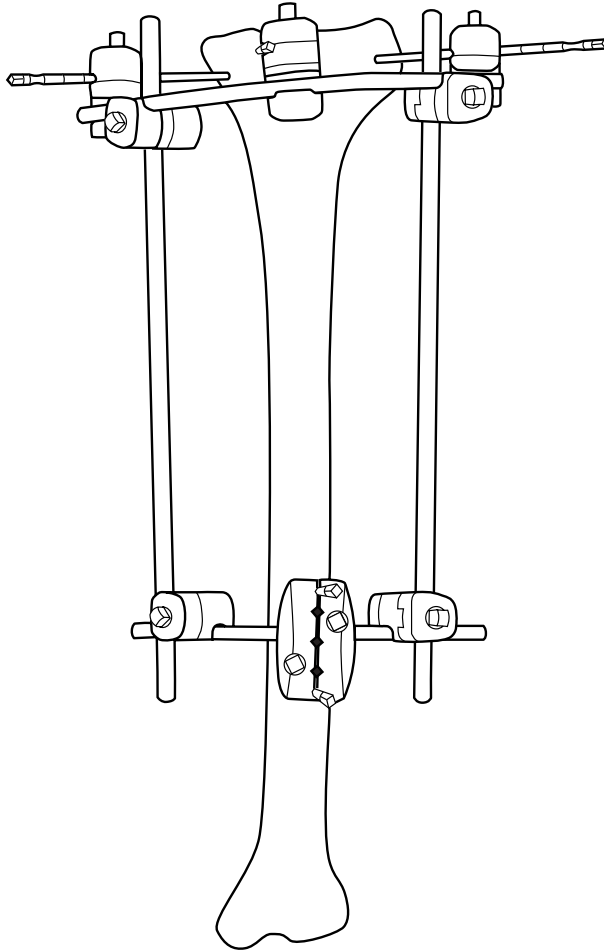
**Weight-bearing Connection**

## Hoffmann® II Frame

### Recommendations

1. Fully open the Rod-to-Rod and Pin-to-Rod Clamps prior to attachment of the component to the frame (Figure 25).
2. Do *not* place Rod-to-Rod or Pin-to-Rod Clamps on the curved portions of the Curved Rod or 30° Angled Post (Figure 26).
3. All 7mm Square Head Screws should be positioned facing away from the patient and other frame components to make tightening more accessible (Figure 27).
4. When possible, place the Rod-to-Rod and Pin-to-Pin Clamps on the *inside* of the frame and *facing* the fracture to increase stability (Figure 29).
5. Connecting Rods should always be kept as short as possible in order to maximise frame stability.
6. Do *not* bend Hoffmann II Aluminium or Carbon Connecting Rods.
7. Always use Stryker® Howmedica Apex® External Fixation Pins with the Hoffmann II External Fixation System.
8. As with all external fixation frames, the frame must be adapted to the weight and fracture patterns of the patient.
9. The Rod-to-Rod and Pin-to-Rod Clamps must be opened completely prior to cleaning and sterilisation.
10. The posts must be removed from the Multi-Pin Clamp Assembly prior to cleaning and sterilisation.
11. Precise reduction is not required prior to Pin insertion. The frame can be assembled and the final reduction performed with the frame *in situ* before all components are locked in place.
12. Hoffmann II is *only* compatible with Stryker® Howmedica's Original Hoffmann®, Monotube® Triax™, and Monticelli-Spinelli™ External Fixation Systems.

## Proximal Tibia Semicircular Frame



Qty.	Cat. No.	Description
1	5029-7 Series	Curved Rod (small, medium, or large in aluminium or carbon)
2	5029-8 Series	8mm Connecting Rod (stainless steel, aluminium, or carbon)
3	4920-1-020	Pin-to-Rod Clamp
4	4920-1-010	Rod-to-Rod Clamp
1	4920-2-020	Multi-Pin Clamp Assembly
2	4920-2-140	30° Angled Post
5	5018 Series	5mm Apex® Half Pin

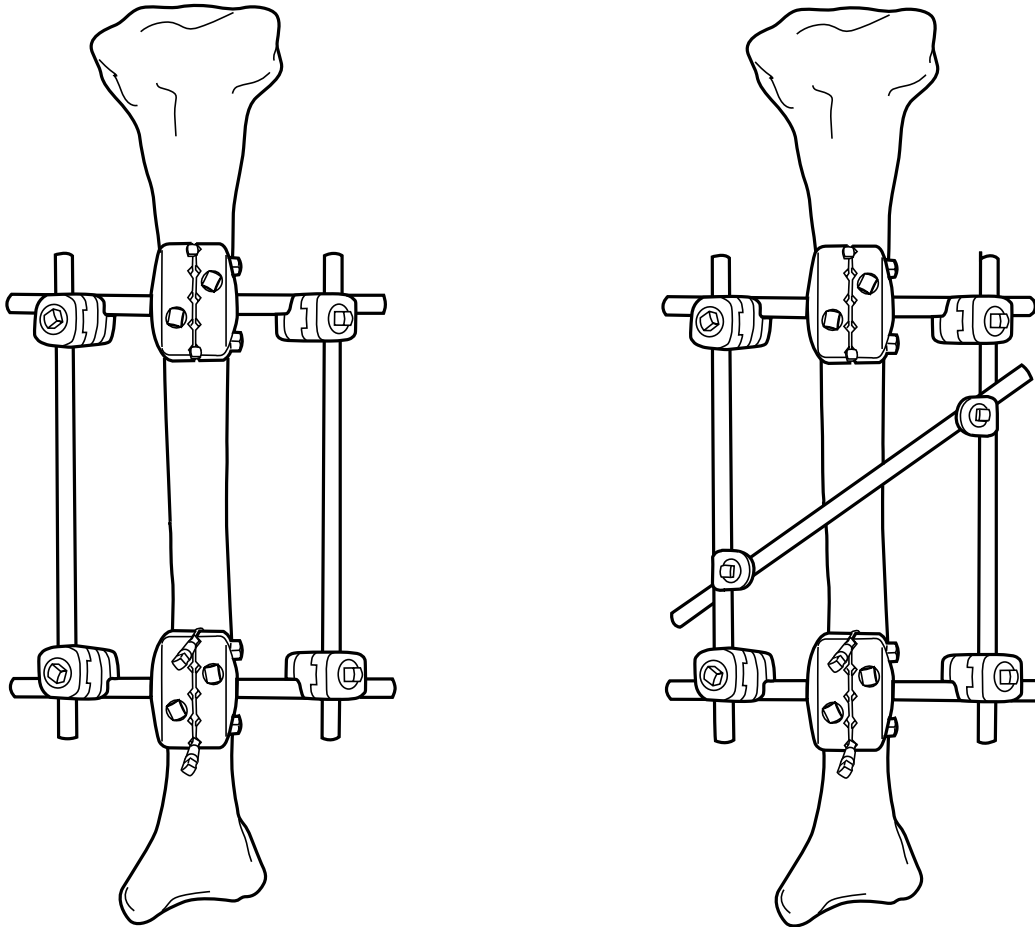
Place three 5mm Apex® Half Pins independently in the proximal tibia using the Curved Rod as a guide. Connect all Single Pins to the Curved Rod using Pin-to-Rod Clamps. 5mm Apex Half Pins are placed in the tibial diaphysis using classical parallel Pin placement with the Multi-Pin Clamp

Assembly. (The Multi-Pin Clamp should be used as a guide for parallel placement of the Pins.) Two 30° Angled Posts are inserted into the Multi-Pin Clamps in an *inverted* "V" position. Connect the Multi-Pin Clamp assembly to the Curved Rod with two 8mm Connecting Rods and four Rod-to-Rod Clamps.

Pin-to-Rod and Rod-to-Rod Clamps should be placed on the inside of the frame, facing the fracture, and *not* placed on the curved portions of the Curved Rod or 30° Angled Post.



# Tibial Shaft Unilateral Frames



Qty.	Cat. No.	Description
2	5029-8 Series	8mm Connecting Rod (stainless steel, aluminium, or carbon)
2	4920-2-020	Multi-Pin Clamp Assembly
4	4920-2-140	30° Angled Post
4	4920-1-010	Rod-to-Rod Clamp
4	5018 Series	5mm Apex® Half Pin

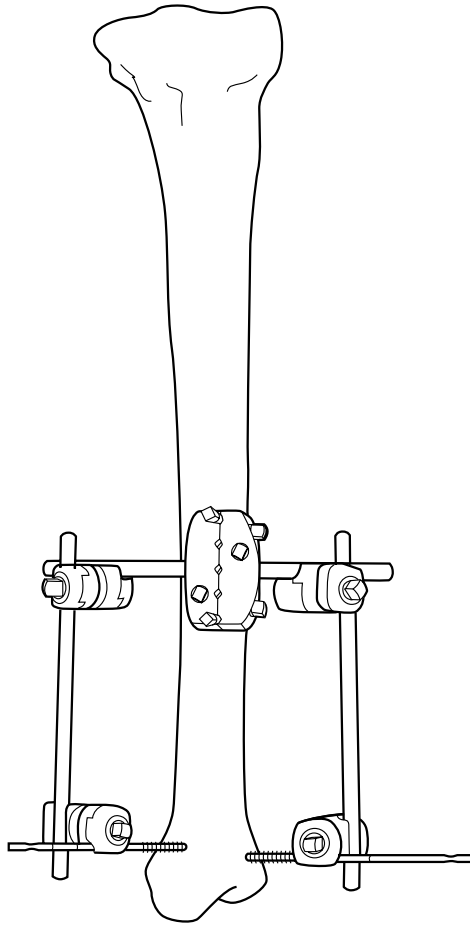
5mm Apex® Half Pins are placed in the tibia using classical parallel Pin placement. (The Multi-Pin Clamp should be used as a guide for parallel placement of the Pin.) Four 30° Angled Posts are inserted into the Multi-Pin Clamp in an *inverted* “V” position. Connect the two Pin Clamp Assemblies using four Rod-to-Rod Clamps and two 8mm Connecting Rods of the appropriate length and material. 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 in place.

If greater stability is required or a bony fragment must be stabilised, use two additional Rod-to-Rod Clamps and an 8mm Connecting Rod to join the medial and lateral Connecting Rods. Capture the bony fragment with a 5mm Apex Half Pin and attach to the transverse 8mm Connecting Rod with a Pin-to-Rod Clamp.

Pin-to-Rod and Rod-to-Rod Clamps should be placed on the inside of the frame, facing the fracture, and *not* placed on the curved portions of the Curved Rod or 30° Angled Post.

## *Distal Tibia Independent Pin Placement*



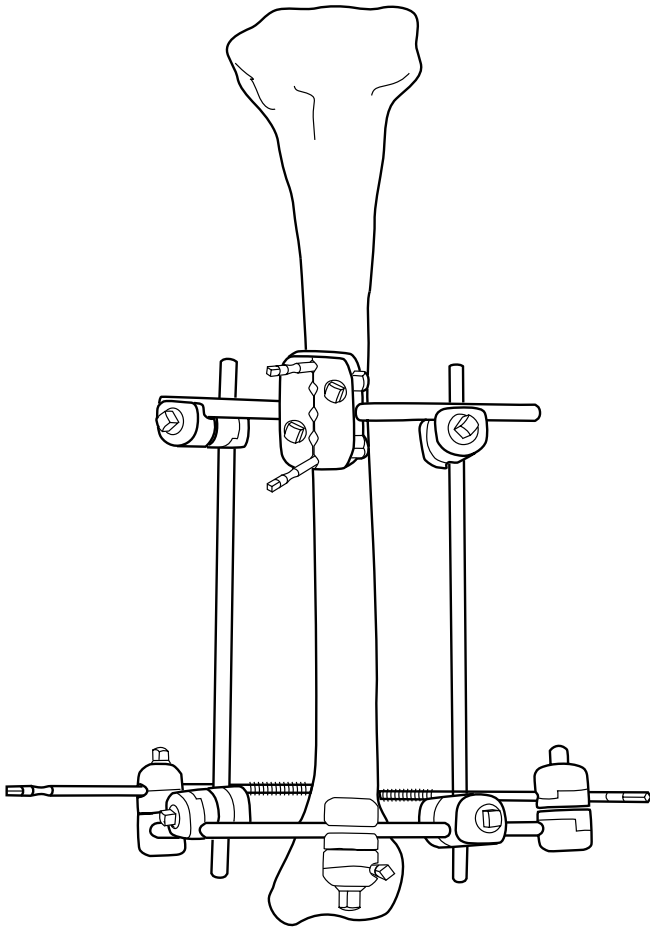
Qty.	Cat.No.	Description
2	5029-8 Series	8mm Connecting Rod (stainless steel, aluminium, or carbon)
1	4920-2-020	Multi-Pin Clamp Assembly
2	4920-2-140	30° Angled Post
2	4920-1-010	Rod-to-Rod Clamp
2	4920-1-020	Pin-to-Rod Clamp
4	5018 Series	5mm Apex® Half Pin

This frame is for extra-articular and distal tibial fractures close to the joint. It may be supplemented with internal fixation. 5mm Apex® Half Pins are placed in the tibial diaphysis using classical parallel Pin placement. (The Multi-Pin Clamp should be used as a guide for parallel Pin placement).

Two 30° Angled Posts are inserted into the Multi-Pin Clamp in an *inverted* "V" position. Independent Pin

placement is in the antero-medial and lateral planes of the tibia using 5mm Apex Half Pins. Connect the Proximal Pin Clamp assembly to the Distal Pins using Pin-to-Rod and Rod-to-Rod Clamps and the appropriate length Connecting Rods. Pin-to-Rod and Rod-to-Rod Clamps should be placed on the inside of the frame, facing the fracture, and *not* placed on the curved portions of the Curved Rod or 30° Angled Post.

# Distal Tibia Semi-Circular Frame



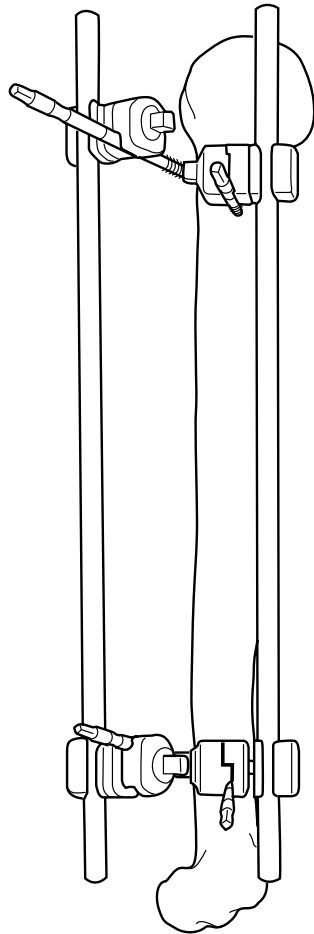
Qty.	Cat.No.	Description
1	5029-7 Series	Curved Rod (small, medium, or large in aluminium or carbon)
2	5029-8 Series	8mm Connecting Rod (stainless steel, aluminium, or carbon)
3	4920-1-020	Pin-to-Rod Clamp
4	4920-1-010	Rod-to-Rod Clamp
1	4920-2-020	Multi-Pin Clamp Assembly
2	4920-2-140	30° Angled Post
5	5018 Series	5mm Apex® Half Pin

Two 30° Angled Posts are inserted into the Multi-Pin Clamp in an inverted “V” position. Connect the Multi-Pin Clamp Assembly to the Curved Aluminium Rod with two 8mm Connecting Rods and four Rod-to-Rod Clamps.

Pin-to-Rod and Rod-to-Rod Clamps should be placed on the inside of the frame, facing the fracture, and *not* placed on the curved portions of the Curved Rod or 30° Angled Post.

Place three 5mm Apex® Half Pins independently in the distal tibia using the Curved Rod as a guide. Connect all Single Pins to the Curved Rod using Pin-to-Rod Clamps. 5mm Apex Half Pins are placed in the tibia using classical parallel Pin placement. (The Multi-Pin Clamp should be used as a guide for parallel placement of the Pins).

## Humeral Fractures Independent Pin Placement



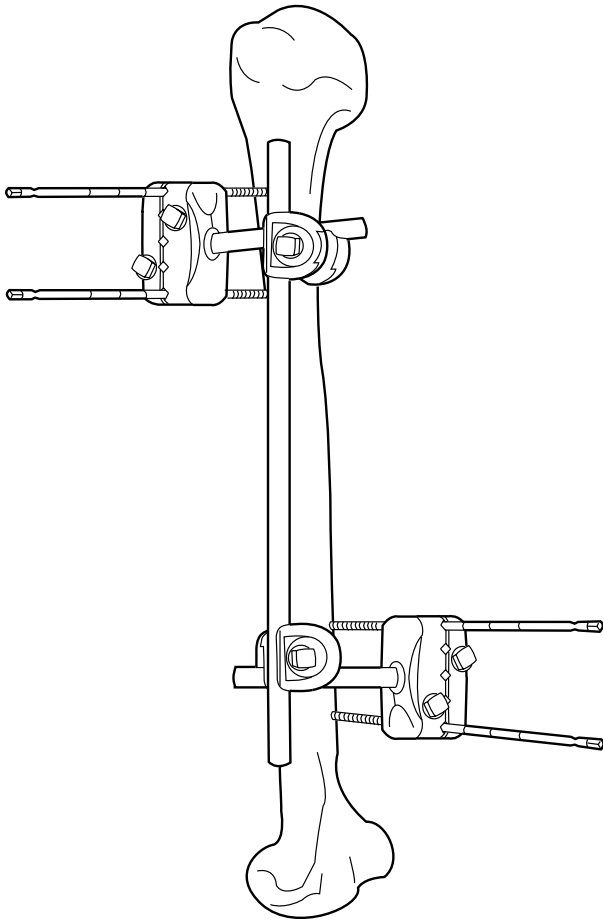
Qty.	Cat.No.	Description
2	5029-8 Series	8mm Connecting Rod (stainless steel, aluminium, or carbon)
4	4920-1-020	Pin-to-Rod Clamp
4	5023 Series	4mm Apex® Half Pin

Pin-to-Rod and Rod-to-Rod Clamps should be placed on the inside of the frame, facing the fracture, and *not* placed on the curved portions of the Curved Rod or 30° Angled Post.

This frame provides minimal external fixation for stabilisation of the humerus. It is useful for fractures near the joints. Independent Pin placement of two proximal Apex® Half Pins in the lateral and/or posterior aspect of the distal humerus is performed. Connect all Single Pins to two 8mm Connecting Rods using Pin-to-Rods Clamps.



# Humeral Shaft Fractures Unilateral Frame



Qty	Cat.No.	Description
1	5029-8 Series	8mm Connecting Rod (stainless steel, aluminium, or carbon)
2	4920-2-020	Multi-Pin Clamp Assembly
2	4920-2-140	30° Angled Post
2	4920-1-010	Rod-to-Rod Clamp
4	5023 Series	4mm Apex® Half Pin

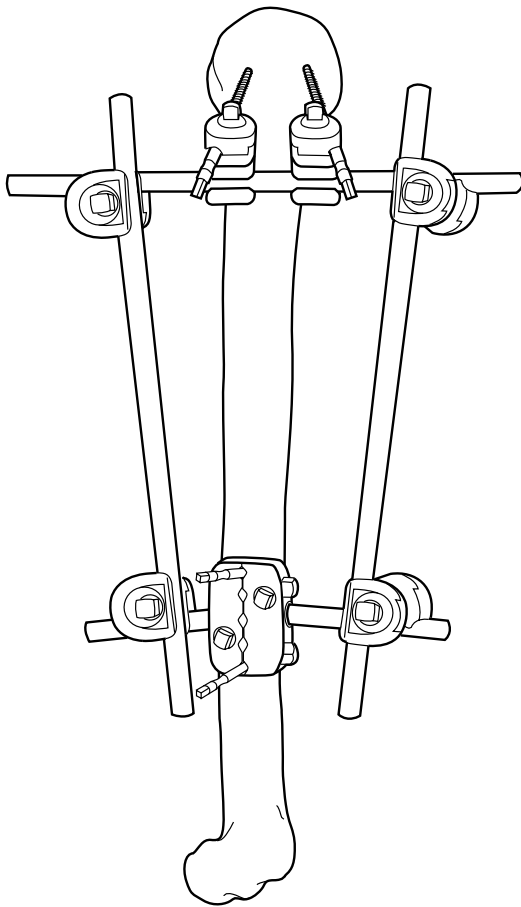
4mm Apex® Half Pins are placed in the humeral diaphysis using classical parallel pin placement of Two Pin Clamp Assemblies. (The Multi-Pin Clamp Assembly should be used as a guide for pin insertion to guarantee parallel pin placement.) Two 30° Angled Posts are inserted into the Multi-Pin Clamp in an *inverted* "V" position. The Proximal Pins should be placed in the lateral and/or posterior aspects of the humerus. Connect the

Two Pin Clamp Assemblies together using two Rod-to-Rod Clamps and an 8mm Connecting Rod of the proper length. Since precise reduction is not required prior to Pin insertion, the frame may be assembled and the final reduction made with the frame *in situ*.

If a bony fragment must be stabilised, capture the fragment with an additional 4mm Apex Half Pin and connect to the 8mm Connecting Rod with a Pin-to-Rod Clamp.

Pin-to-Rod and Rod-to-Rod Clamps should be placed on the inside of the frame, facing the fracture, and *not* placed on the curved portions of the Curved Rod or 30° Angled Post.

## *Proximal Third Humeral Frame and Anatomic Neck*



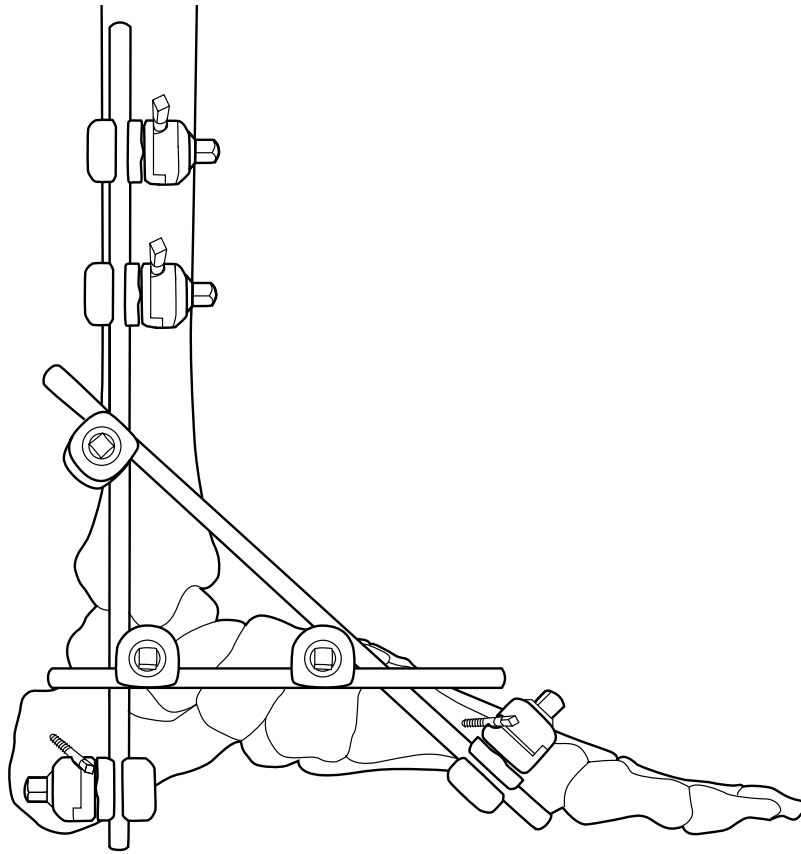
Two 4mm Apex® Self-Drilling Pins are inserted in the humeral head, first in the posterior-lateral plane and then in the anterior-lateral plane, maintaining a 45° degree angle between the two pins.

Two additional 4mm Apex Self-Drilling Pins are inserted in the humeral diaphysis, above the torsional compartment of the radial nerve, using a Multi-Pin Clamp. Two 30° Angled Posts are linked to the Pin Clamp in an inverted “V” position.

Anatomic reduction is then performed; after the reduction is achieved, the two Proximal Pins are linked to a Transversal Aluminium Rod using two 8x(Pin-to-Rod) Articulation Couplings.

Four 8x8mm Articulation Couplings are then placed to link the Diaphyseal Pin Clamp and the Proximal Transversal rod using two 200mm Aluminium Rods.

# Ankle Stabilisation Frame

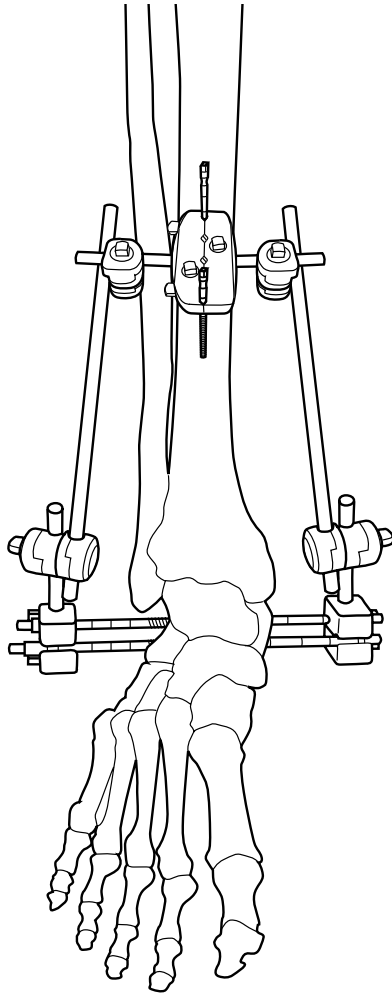


Qty	Cat.No.	Description
2	5029-8 Series	8mm Connecting Rods (stainless Steel, aluminium, or carbon)
3	4920-1-020	Pin-to-Rod Clamp
1	4920-1-010	Rod-to-Rod Clamp
2	5018 Series	5mm Apex® Half Pin
1	5023 Series	4mm Apex® Half Pin

Pin-to-Rod and Rod-to-Rod Clamps should be placed on the inside of the frame, facing the fracture, and *not* placed on the curved portions of the Curved Rod or 30° Angled Post.

Stabilisation of intra-articular ankle fractures can be achieved with a minimal external fixation and supplemental internal fixation. Place 5mm Apex® Half Pins independently in the tibial diaphysis and the calcaneus; place a 4mm Apex Half Pin independently in the first metatarsal. Connect all Single Pins to 8mm Connecting Rods of the appropriate length. Connect the 8mm Rods with a Rod-to-Rod Clamp.

# Ankle Fusion Frame



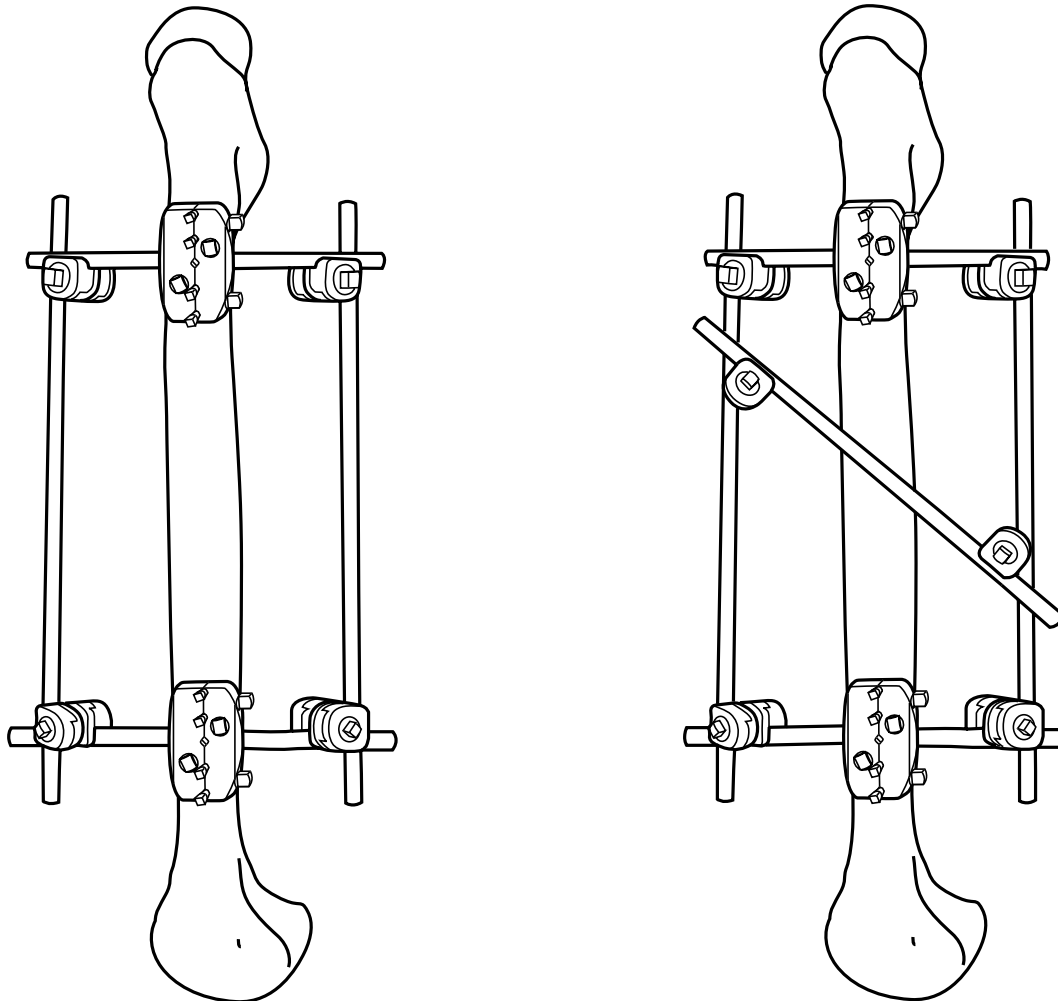
Qty	Cat.No.	Description
2	5029-8 Series	8mm Connecting Rods (stainless steel, aluminium, or carbon)
3	4920-2-020	Multi-Pin Clamp Assembly
4	4920-2-140	30° Angled Post
4	4920-1-010	Rod-to-Rod Clamp
2	5030 Series	4mm Apex® Transfixing Pin
2	5018 Series	5mm Apex® Half Pin

This frame is recommended for ankle fusions or fixation of the ankle. Place two parallel 4mm Apex® Transfixing Pins in the calcaneus. A Multi-Pin Clamp Assembly should be used as a pin insertion guide to guarantee parallel transfixing pin placement. Two Multi-Pin Clamp

assemblies with one 30° Angled Post are placed on each side of the ankle. Place two parallel 5mm Apex Half Pins on the anterior medial aspect of the tibial crest with a Multi-Pin Clamp and two 30° Angled Posts. Connect the Pin Clamp assemblies using four Rod-to-Rod Clamps and two 8mm Connecting Rods of the appropriate length. Pin-to-Rod and Rod-to-Rod Clamps should be placed on the inside of the frame, facing the fracture, and *not* placed on the curved portions of the Curved Rod or 30° Angled Post.



# Femur Unilateral Frame



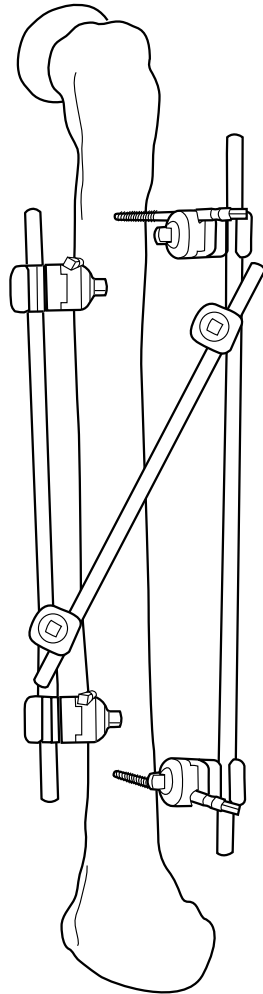
Qty.	Cat.No.	Description
2	5029-8 Series	8mm Connecting Rods (stainless steel, aluminium or carbon)
2	4920-2-020	Multi-Pin Clamp Assembly
4	4920-2-140	30° Angled Post
4	4920-1-010	Rod-to-Rod Clamp
8	5018 Series	5mm Apex® Half Pin

This frame is recommended for polytrauma patients and Grade III open fractures. Use the Multi-Pin Clamp assembly as a guide when placing the 5mm Apex® Half Pins in the lateral plane of the femur. Capture pins with the two Multi-Pin Clamp assemblies and four 30° Angled Posts in an *inverted* "V" position. Connect the two

Multi-Pin Clamps with four Rod-to-Rod Clamps and two 8mm Connecting Rods of the appropriate length. If greater stability is required or a bony fragment must be stabilised, use two additional Rod-to-Rod Clamps and an 8mm Connecting Rod to join the medial and lateral Connecting Rods. Capture the bony fragment with a 5mm Apex Half Pin and connect to the transverse 8mm Connecting Rod with a Pin-to-Rod Clamp.

Pin-to-Rod and Rod-to-Rod Clamps should be placed on the inside of the frame, facing the fracture, and *not* placed on the curved portions of the Curved Rod or 30° Angled Post.

# *Femur Independent Pin Placement Temporary Frame*



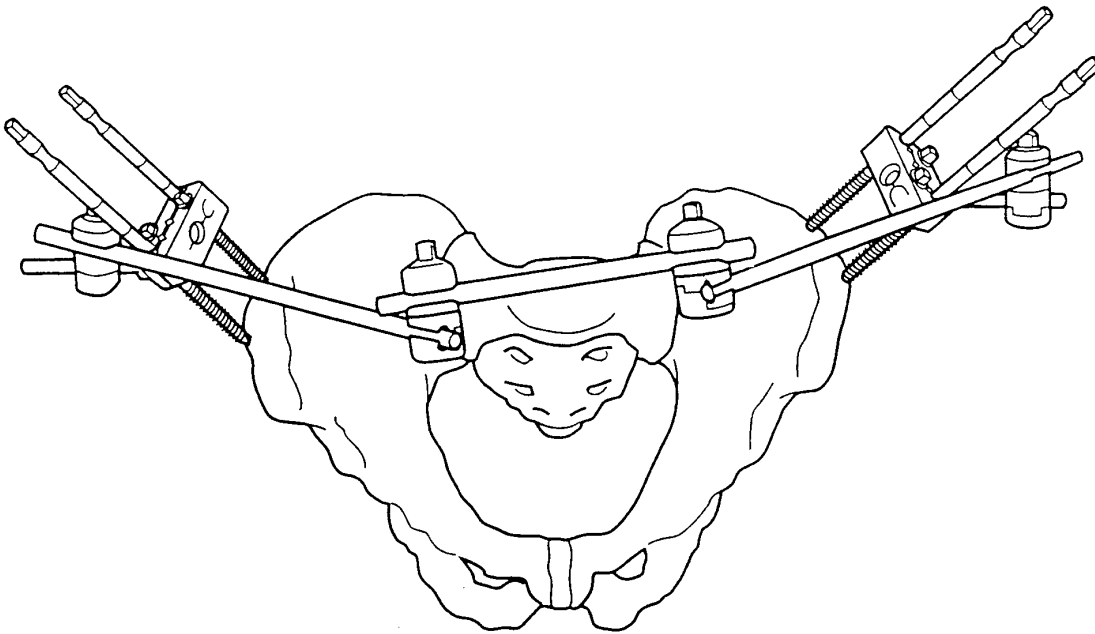
Qty.	Cat.No.	Description
3	5029-8 Series	8mm Connecting Rods (stainless steel, aluminium, or carbon)
2	4920-1-010	Rod-to-Rod Clamp
4	4920-1-020	Pin-to-Rod Clamp
4	5018 Series	5mm Apex® Half Pin

This frame is recommended for temporary fixation of polytrauma patients and Grade III open fractures, when internal fixation may not be indicated. Independent pin placement consists of two proximal 5mm Apex® Half Pins in the antero-lateral plane of the proximal femur, and two 5mm Apex Half Pins in the antero-lateral and lateral plane of the distal femur. Connect all Single Pins to 8mm Connecting Rods of the appropriate

length using Pin-to-Rod Clamps. Connect the medial and lateral Connecting Rods with a transverse 8mm Connecting Rod and two Rod-to-Rod Clamps.

If a bony fragment must be stabilised, capture the bony fragment with a 5mm Apex Half Pin and connect to the transverse 8mm Connecting Rod with a Pin-to-Rod Clamp.

Pin-to-Rod and Rod-to-Rod Clamps should be placed on the inside of the frame, facing the fracture, and *not* placed on the curved portions of the Curved Rod or 30° Angled Post.


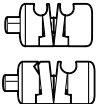
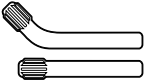
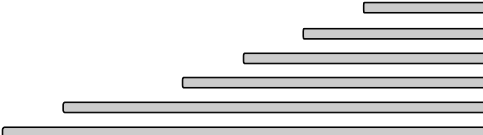

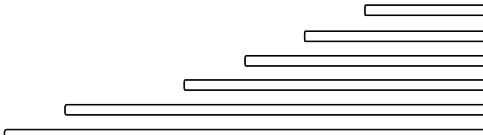
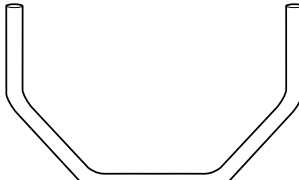


Qty.	Cat.No.	Description
2	5029-8 Series	8mm Connecting Rods (stainless steel, aluminium, or carbon)
2	4920-2-020	Multi-Pin Clamp Assembly
2	4920-2-140	30° Angled Post
4	4920-1-010	Rod-to-Rod Clamp
4	5018 Series	5mm Apex® Half Pin

5mm Apex® Half Pins are placed parallel (using the Multi-Pin Clamp assembly as a guide) in the iliac wing at 45° degrees or posterior to the acetabulum (Pins aimed at the greater trochanter). This Pin placement offers a better quantity of bone for the Pins to gain fixation.

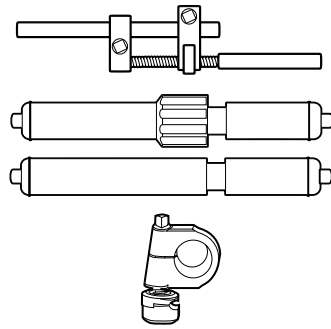
*Caution should be taken while placing these Pins to avoid drilling through the medial or lateral walls of the pelvis.* Pin placement should be confirmed radiographically. Connect Half Pins with a Multi-Pin

Clamp Assembly and one 30° Angled Post. The half pin nuts on the Multi-Pin Clamp should face away from the patient for easy tightening. Multi-Pin Clamp Assemblies are joined with three Connecting Rods of the appropriate length and four Rod-to-Rod Clamps. Rod-to-Rod Clamps should be placed on the inside of the frame, facing the fracture, and not placed on the curved portions of the Curved Rod or 30° degree Angled Post.

	<b>Catalogue Number</b>	<b>Description</b>
	4920-2-020	Pin Clamp Assembly with no Post
	4920-2-060	10 Hole Pin Clamp Assembly with no Post
	4920-1-010	Rod to Rod Coupling 8/8mm
	4920-1-020	Pin to Rod Coupling 8/4, 5mm
	4920-1-030	Inverted Pin to Rod Coupling 8/4, 5mm
	4920-2-140	30° Angled Post, Stainless Steel
	4920-2-120	Straight Post, Stainless Steel
	5029-8-605	Alum. Connecting Rod 8mm x 65mm
	5029-8-610	Alum. Connecting Rod 8mm x 100mm
	5029-8-615	Alum. Connecting Rod 8mm x 150mm
	5029-8-620	Alum. Connecting Rod 8mm x 200mm
	5029-8-625	Alum. Connecting Rod 8mm x 250mm
	5029-8-630	Alum. Connecting Rod 8mm x 300mm
	5029-8-635	Alum. Connecting Rod 8mm x 350mm
	5029-8-640	Alum. Connecting Rod 8mm x 400mm
	5029-8-645	Alum. Connecting Rod 8mm x 450mm
	5029-8-650	Alum. Connecting Rod 8mm x 500mm
	5029-8-805	Carbon Connecting Rod 8mm x 65mm
	5029-8-810	Carbon Connecting Rod 8mm x 100mm
	5029-8-815	Carbon Connecting Rod 8mm x 150mm
	5029-8-820	Carbon Connecting Rod 8mm x 200mm
	5029-8-825	Carbon Connecting Rod 8mm x 250mm
	5029-8-830	Carbon Connecting Rod 8mm x 300mm
	5029-8-835	Carbon Connecting Rod 8mm x 350mm
	5029-8-840	Carbon Connecting Rod 8mm x 400mm
	5029-8-845	Carbon Connecting Rod 8mm x 450mm
	5029-8-850	Carbon Connecting Rod 8mm x 500mm
	5029-8-065	Stainless Steel Connecting Rod 8mm x 65mm
	5029-8-100	Stainless Steel Connecting Rod 8mm x 100mm
	5029-8-150	Stainless Steel Connecting Rod 8mm x 150mm
	5029-8-200	Stainless Steel Connecting Rod 8mm x 200mm
	5029-8-250	Stainless Steel Connecting Rod 8mm x 250mm
	5029-8-300	Stainless Steel Connecting Rod 8mm x 300mm
	5029-8-350	Stainless Steel Connecting Rod 8mm x 350mm
	5029-8-400	Stainless Steel Connecting Rod 8mm x 400mm
	5029-8-450	Stainless Steel Connecting Rod 8mm x 450mm
	5029-8-500	Stainless Steel Connecting Rod 8mm x 500mm
	5029-7-028	Curved Alum. Rod Semi Circular Small
	5029-7-030	Curved Alum. Rod Semi Circular Medium
	5029-7-032	Curved Alum. Rod Semi Circular Large

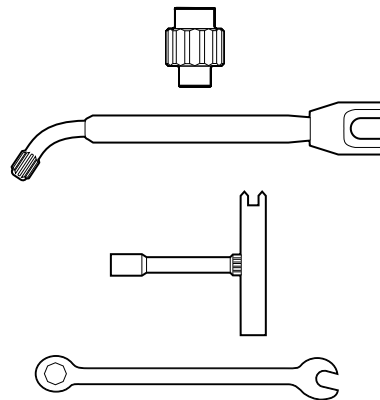
# Products

Catalogue Number	Description
5029-7-015	Adjustable Connecting Rod Long
5029-7-016	Adjustable Connecting Rod Short
4920-0-000	Dynamisation/Distraktion Rod for Hoffmann® II
4920-0-015	Compression/Distraktion Rod for Hoffmann® II
4920-1-100	Dynamisation/Distraktion Rod to Rod Coupling



# Instruments

4920-9-020	Removable Thumbwheel
4920-9-010	Stabilisation/Reduction Wrench
5054-3-005	T-Wrench
5054-8-009	Spanner Wrench
4920-9-980	Hoffmann® II Case / Large Frame Components



# Spare Parts

4920-2-150	O-rings for Hoffmann® II Posts
5150-7-025	O-rings for Hoffmann® II Dynamization / Distraktion Tubes
4920-2-175	7mm Screw for Hoffmann® II Pin Clamp Assembly



*Hoffmann® II*  
*External Fixation*  
*System\* Surgical*  
*Technique*

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Hoffmann®II Swiss Patent Application: 01-709/94-3. Other Patents Pending. \* Patents: EU 385,929; 374,093; Canada 1,193,506; U.S. 5,160,335 and 5,207,676. \*\* Swiss Patent Application: 02-709/94-3. Other Patents Pending.

\*\*\* Patents: EU 230,856; Swiss CH 671,150; U.S. 4,978,350.

†Data on file at Stryker® Howmedica Osteonics USA.



## Monotube<sup>®</sup> TRIAX<sup>™</sup> \*

EXTERNAL FIXATION SYSTEM

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.

## Hoffmann<sup>®</sup>II \*\*

EXTERNAL FIXATION SYSTEM

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

## Hoffmann<sup>®</sup>II Compact<sup>™</sup>

EXTERNAL FIXATION SYSTEM

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<sup>®</sup> II System, based on a spring-loaded snap-fit mechanism that improves flexibility and ease-of-use.

## Dynamic Joint Distractor II

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

## TenXor<sup>™</sup>

External Fixation System

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

## Apex<sup>®</sup> \*\*\*

PIN FIXATION

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



**stryker<sup>®</sup> Trauma**

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