

# Smith+Nephew

## MAVERICK Unilateral External Fixation

Surgical Technique



# Table of Contents

Device description .....	1
Pin insertion technique .....	2
Multi-Pin Clamps and Posts .....	5
Clamps and Bars.....	6
Frame removal .....	7

## **Construct examples**

Diaphyseal Tibia.....	8
Diaphyseal Femur .....	9
Proximal Tibia.....	10
Knee Spanning Option 1.....	11
Knee Spanning Option 2.....	12
Ankle-Spanning option 1 .....	13
Ankle-Spanning option 2 .....	14
Ankle-Spanning option 3 .....	15
Tibial Frame .....	16
Traveling Traction .....	17
Pelvic stabilization .....	18
Elbow stabilization.....	19

MR safety information .....	20
Catalog information .....	21
Compatibility with JET-X <sup>®</sup> .....	25
MAVERICK <sup>®</sup> Instrument and implant trays .....	27
Tray layout.....	28

## Device description

MAVERICK<sup>®</sup> Unilateral External Fixation is a system comprising of Bars, Clamps and Pins with the associated instruments.

MAVERICK Unilateral External Fixation is used to acutely stabilize fractures of the long bones, feet and pelvis. Definitive fixation can be planned and performed when co-morbidities are under control and soft tissue coverage is restored.

Pins are provided in 3mm, 4mm, 5mm, 6mm thread diameter, with a shaft diameter of 5 or 6mm. This allows all MAVERICK Pins to be captured by all MAVERICK Clamps. Pins are self-drilling, self-tapping. Drills are provided and are optional.

There are two Clamp designs – Swivel and Combi. The Swivel Clamp features 360° rotation and 15° angulation. The Combi Clamp has rotation without angulation. Both Swivel and Combi facilitate Bar-to-Bar and Bar-to-Pin functionality, requiring tightening of one nut to secure.

Bars are 11mm Carbon Fiber available in Straight, Curved and Bent.

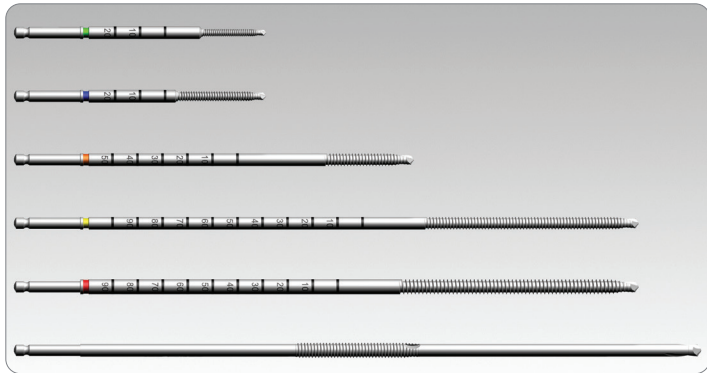
### Note Bena

The following technique guide was prepared under the guidance of Edward Perez MD, Matthew Rudloff MD and Michael Beebe MD. It contains a summary of surgical techniques and opinions based upon their training and expertise in the field, along with their knowledge of Smith+Nephew products. It is provided for educational and informational purposes only. Smith+Nephew does not provide medical advice and it is not intended to serve as such. It is the responsibility of the treating physician to determine and utilize the appropriate products and techniques according to their own clinical judgment for each of their patients. For more information on the products in this surgical technique, including indications for use, contraindications, effects, precautions and warnings, please consult the products' Instructions for Use (IFU).

## MAVERICK<sup>®</sup> Pin insertion technique

The thread diameter and length are chosen with respect to the anatomy. As a general rule, thread diameter should not exceed 1/3 the diameter of the bone. Thread length is chosen to achieve bicortical fixation. Pins of 5mm or 6mm diameter are recommended for long bone and joint-spanning constructs. Pins of 3mm and 4mm are suited to application in the foot.

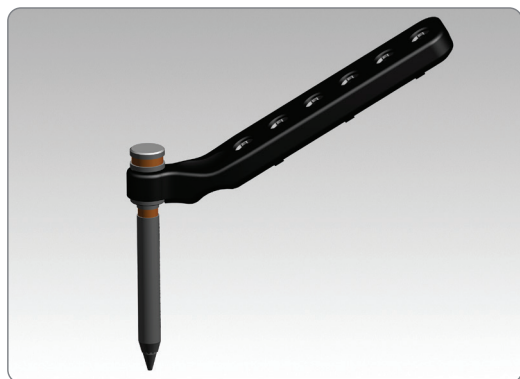
Instruments used for Pin preparation and insertion are color coded



3mm Pins and Instruments	Green
4mm Pins and Instruments	Blue
5mm Pins and Instruments	Orange
5mm Pins and Instruments	Yellow
6mm Pins and Instruments	Red
Transfixing Pins and Instruments	No Color

Future definitive fixation strategies should be considered when choosing location of Pins. Hardware already in-situ may interfere with ideal pin placement. Pin placement too close to existing hardware may lead to stress risers, periprosthetic fractures or construct failure. Ensure there is adequate bone stock to achieve fixation, and a healthy soft tissue bridge.

Intraoperative fluoroscopy helps to achieve proper pin placement, especially if the pin corridor is adjacent to existing hardware.



### Step 1 • Tissue Protector assembly

The Tissue Protector Handle is used to control the Tissue Protector and avoid X-ray exposure of the surgeon's hand. Insert the Tissue Protector Sleeve into the Tissue Protector Handle aligning the flat surfaces on each.

Insert the Trocar into the Tissue Protector to assist in soft tissue penetration.

Make a stab incision at the target pin site and dissect down to bone. Elevate the periosteum to minimize contact of soft tissue with the drill or pin. Insert the assembled Tissue Protector through soft tissue to bone. A light tap will help to dimple the cortex and minimize skiving.

Remove the trocar.



### Step 2 • Pre-Drilling is optional

MAVERICK<sup>◊</sup> and JET-X<sup>◊</sup> Pins are self-drilling and drilling is optional. The appropriate Pin can be connected to power and inserted through the Tissue Protector.

If pre-drilling is preferred, insert the Drill Sleeve of matching color into the Tissue Protector. Select the correct Drill and connect to power. Drill through first cortex and continue drilling. Drill through second cortex, noting depth mark on the drill when breakthrough occurs. Remove drill. Connect the chosen Pin to the preferred T-handle and insert by hand.



### Step 3 • Insert Pin

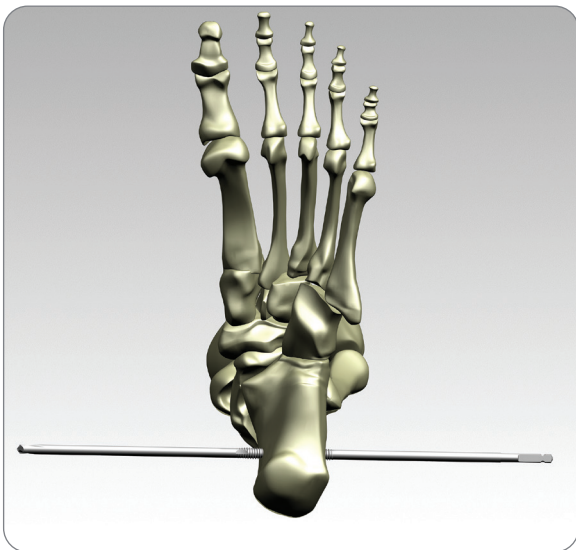
The Short T-Handle locks onto the pin. The Long T-Handle can drive the pin, but the pin does not lock into the handle. Do not rely on the handle to hold the pin.

For pre-drilled holes, drive pin until depth mark matches the desired depth determined by drilling. For self-drilling pins without pre-drilling, insert pin through first cortex, continuing until second cortex is reached. Using the depth marks, continue to insert self-drilling pin an appropriate additional depth to embed pin tip into or through the second cortex.



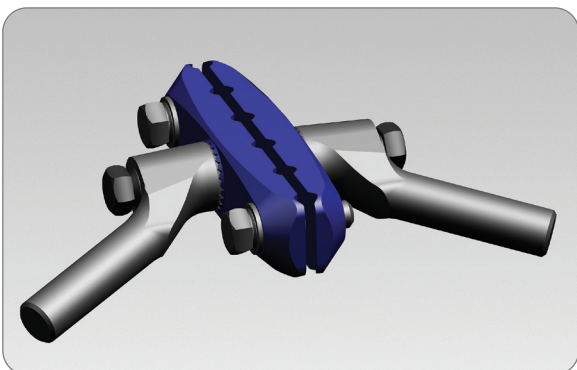
#### Step 4 • Multi-Pin Clamps

The holes in the Tissue Protector Handle serve as a guide for multiple Tissue Protectors and align with the holes of the Multi-Pin Clamps. It is recommended that the first pin is placed fully into bone before the second pin hole is pre-drilled.

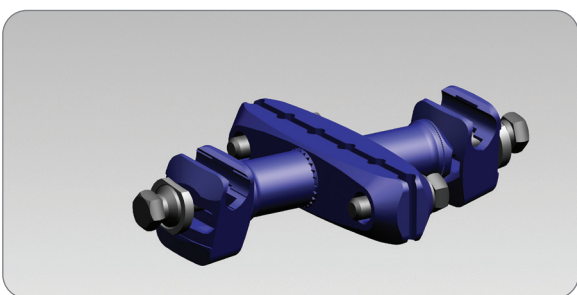


#### Step 5 • Transfixing Pin

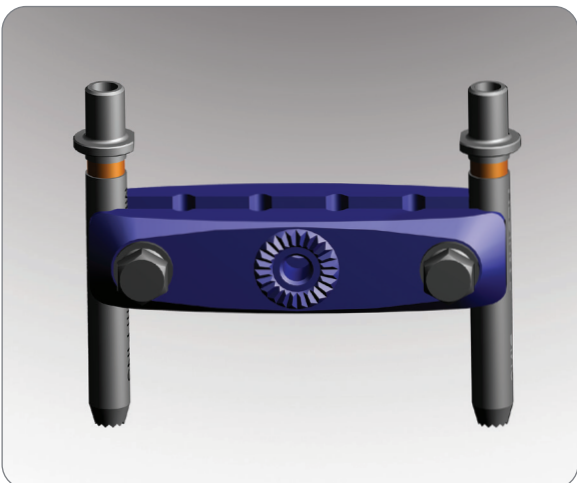
For Transfixing Pins, the steps are the same, except the tip of the pin should be driven through the far cortex and exit the soft tissue so that both ends of the pin can be connected to the frame. Note the JET-X<sup>®</sup> Traction Pin is not compatible with the MAVERICK<sup>®</sup> Transfixing Pin Tissue Protector.



**Option 1:** Multi Pin Clamp with Posts



**Option 2:** Multi Pin Clamp with Swivel Attachments



## MAVERICK<sup>◇</sup> Multi-Pin Clamps and Posts

Multi-Pin Clamps can have either Posts (option 1) or Swivel Attachments (option 2) connected to them.

Assemble the Posts to the Multi-Pin prior to placing on the Pins so that the Posts can help with Clamp adjustment. The Posts can be repositioned after the Clamp is placed on the Pins if required.

Choose the appropriate Post or Swivel Attachment. Start the screw into the threaded hole on the side of the Multi-Pin. Once the screw is deep enough, turn the Post to the desired position and engage the serrations with the Multi-Pin Clamp. When using a Swivel Attachment, ensure the Bar is in the desired position before tightening the screw. Hand-tighten the screw. If repositioning is required, loosen the screw 1 to 2 turns, reset the position, and hand-tighten.

Multi-pin clamps may be used as a drill guide instead of the Tissue Protector Handle. Insert both Tissue Protectors into the desired slots on the Multi-Pin Clamp. Tighten the Clamp by hand to stabilize. Use the Trocar in the Tissue Protector to help with soft tissue penetration.

If the first Pin has already been inserted, slide the assembly over the first Pin. Set the heights of the Tissue Protectors to get the Clamp aligned as desired. Press the teeth of the Tissue Protector to bone. Remove the trocar. Insert the Pin according to technique described on Page 3. Loosen the screws on the Multi-Pin Clamp. Slide the tissue protectors out of the Clamp and off the pins. Hand-tighten the Multi-Pin Clamp on the Pins at the desired height.

## MAVERICK® Clamps and Bars

Snap the chosen Clamp onto the Pins or Posts. Snap the Bars onto the Clamps.

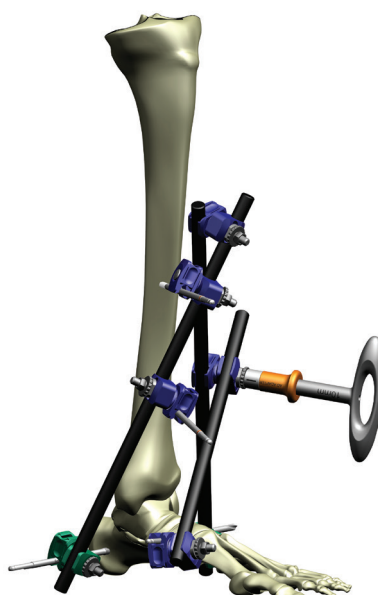
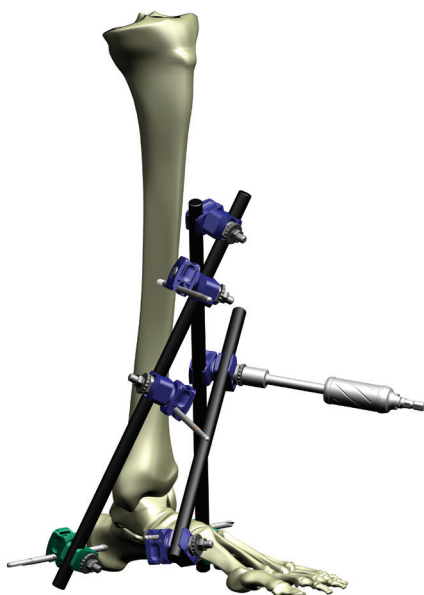
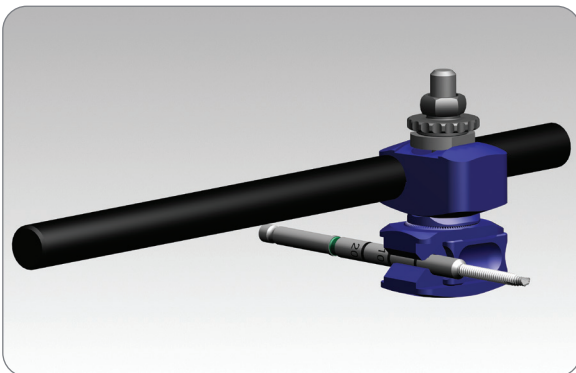
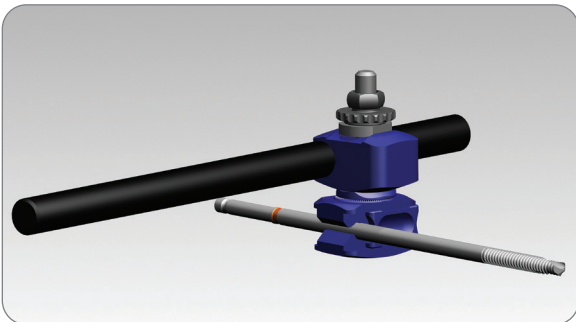
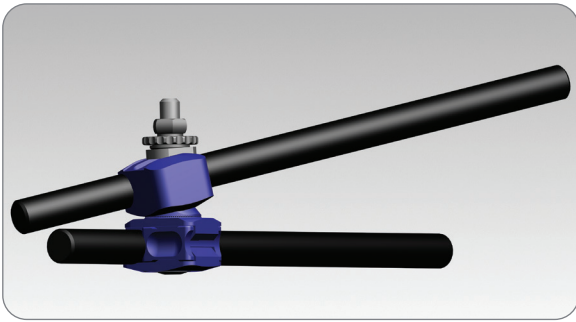
Finger-tighten the Clamps. Check the reduction and the frame geometry. Loosen the nut  $\frac{1}{2}$  to 1 full turn to allow the Clamp to be repositioned if necessary.

The Afterburner can be connected to power and used to quickly tighten all Clamps, Multi-Pin Clamps and Posts without definitively locking them.

Use one of the T-Handles or 10mm Wrench to definitively tighten each connection.

While tightening with the Afterburner, hold the component being tightened with the other hand.

Note it is not recommended to use the Afterburner to untighten components.





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## Frame removal

Frame removal is performed at the discretion of the surgeon, typically when the patient is ready for definitive fracture fixation.

1. Loosen all Clamps, Posts and Swivel Attachments using a 10mm Wrench and turning the nut or screw counter-clockwise.
2. Remove the Bars from the Clamps by pushing them out of the loosened jaws.
3. Remove Clamps from any Multi-Pin Posts and any Pins by pushing them off the Post or Pin. It may help to twist the Clamps slightly as you push it off the Post or Pin.
4. Loosen Multi-Pin Clamps using a 10mm Wrench turning the screws counter-clockwise, then sliding them off over the end of the Pins.
5. Remove the Pins from the bone by unscrewing them counter-clockwise.
  - A. If the pin is intact, the standard T-handles can be used on the quick connect end.
  - B. If the pin has been cut, use a T-handle Jacob's Chuck to grip the remaining end of the pin and unscrew the pin from the bone.

MAVERICK<sup>®</sup> and JET-X<sup>®</sup> components are intended for Single Patient Use and should be discarded in line with local Biohazardous Waste Protocol.

## Construct examples

### MAVERICK® Constructs for some common fracture patterns

These are examples of possible frame constructs. The proper frame construct will depend on the fracture pattern, bone size, and soft tissue considerations. The proper Pin diameter and length should be chosen to match the anatomy and construct.

#### Diaphyseal fracture – Tibia



Description	Qty
5mm or 6mm Half Pins	4
11mm Bar	2
Multi-Pin Clamp with Swivel Attachments	2



## Diaphyseal fracture – Femur

Description	Qty
6mm Pins	
Multi-Pin Clamps with Angled Posts	2
Swivel Clamps	4
11mm Bars	2



## Tibial Plateau using Bent Bar construct

Description	Qty
5mm or 6mm Half Pins	4
11mm Bar	2
11mm Bent Bar	1
Swivel or Combi Clamp	6
Multi-Pin Clamp with Angled Posts	1

## Knee-Spanning with Multi-Pin Clamps



Description	Qty
5mm or 6mm Half Pins	4
11mm Bar	2
11mm to 5-6mm Clamp	4
Multi-Pin Clamps with Posts	2

## Knee-Spanning with Swivel or Combi Clamps



Description	Qty
5mm or 6mm Pins	4
11mm Bars	3
Swivel or Combi Clamp	6

## Ankle Spanning Delta Frame



Description	Qty
Transfixing Pin	1
5mm or 6mm Pins	2
11mm Bar	2
Multi-Pin Clamp with Swivel Attachments	1
Swivel or Combi Clamp	2

## Ankle Spanning Delta Frame incorporating the Foot



Description	Qty
Transfixing Pin	1
5mm or 6mm Pins	2
3mm or 4mm Pins	1
11mm Bar	3
Multi-Pin Clamp with Swivel Attachments	1
Swivel or Combi Clamp	3





## Ankle Spanning Delta Frame incorporating the Foot and Kickstand on the Hindfoot

Description	Qty
Transfixing Pin	1
5mm or 6mm Pins	2
3mm or 4mm Pin	1
11mm Bar	2
Multi-Pin Clamp with Swivel Attachments	1
Swivel or Combi Clamp	4
Bent Bar	1

## Tibial Frame without Multi-Pin Clamps

Description	Qty
Transfixing Pin	1
5mm or 6mm Pins	2
3mm or 4mm Pin	1
11mm Bar	4
Attachments	1
Swivel or Combi Clamp	8





## Traveling traction

Description	Qty
Transfixing Pins	2
Bars	2
Swivel or Combi Clamps	4

## Pelvic stabilization



Description	Qty
11mm Curved Bar	1
6mm Half Pins	2
Swivel or Combi Clamp	2

Description	Qty
6mm Pins	2
11mm Straight Bar	2
Multi-Pin Clamps with Angled Posts	2
Swivel or Combi Clamp	1



## Elbow stabilization

Description	Qty
5mm Pins	4
Multi-Pin Clamp with one Swivel Attachment	2
Curved Bar	1



Description	Qty
5mm Pins	4
Multi-Pin Clamp with Swivel Attachments	2
Curved Bar	2

## MR safety information

MAVERICK is MR Conditional

Non-clinical testing demonstrated that Smith+Nephew's MAVERICK External Fixation System are MR Conditional only outside the MRI scanner bore.<sup>1</sup> A patient with the MAVERICK External Fixation System can be scanned safely in an MR system meeting the following conditions:

- The External Fixator must remain entirely outside of the MRI scanner bore.
- If a MAVERICK External Fixator contains any components that are MR Unsafe, the entire external fixator should be considered MR Unsafe.
- Whole body RF transmit coil.
- Static magnetic field of 1.5-Tesla (1.5 T) or 3-Tesla (3 T).
- Maximum spatial field gradient of 3,000 G/cm (30.0 T/m).
- Whole body averaged specific absorption rate (SAR) of 2.0 W/kg.

The scanner SAR restrictions above apply to a whole-body RF coil using a circularly polarized transmit mode.

Under the scan conditions defined above, Smith+Nephew's MAVERICK External Fixation System are expected to produce a maximum temperature rise less than or equal to 1.1° C after 15 minutes of continuous scanning at 1.5 T and less than or equal to 1.1° C at 3 T.




In non-clinical testing using gradient echo and spin echo sequences, Smith+Nephew external fixation systems will not cause image artifact or image distortion when they are located outside of the MRI scanner bore during imaging.<sup>1</sup>

## Catalog information

### MAVERICK<sup>®</sup> Clamps

Reference	Description	
71094020	MAVERICK Swivel Clamp 11mm to 5-6mm	
71094015	MAVERICK Combi Clamp 11mm to 5-6mm	
71094111	MAVERICK Swivel Attachment	
71094045	MAVERICK Multi-Pin Clamp 45mm	
71094075	MAVERICK Multi-Pin Clamp 75mm	

### MAVERICK Posts

Reference	Description	
71094060	MAVERICK Post Straight	
71094030	MAVERICK Post 30°	
71094090	MAVERICK Post 90°	

MAVERICK Bars

**Reference**    **Description**

71094100	MAVERICK Bar 11mm x 100mm
71094150	MAVERICK Bar 11mm x 150mm
71094200	MAVERICK Bar 11mm x 200mm
71094250	MAVERICK Bar 11mm x 250mm
71094300	MAVERICK Bar 11mm x 300mm
71094350	MAVERICK Bar 11mm x 350mm
71094400	MAVERICK Bar 11mm x 400mm
71094500	MAVERICK Bar 11mm x 500mm
71094600S	MAVERICK Bar 11mm x 600mm Sterile



71094190	MAVERICK Bent Bar 11mm x 190mm
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71094210	MAVERICK Curved Bar 11mm x 210mm
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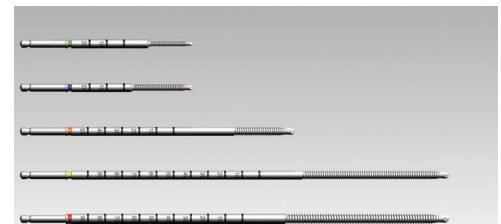
71094380	MAVERICK Curved Bar 11mm x 380mm
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MAVERICK Pins

**Reference**    **Description**

71094315	MAVERICK Half Pin SS 3 x 100 x 15mm
71094325	MAVERICK Half Pin SS 3 x 100 x 25mm
71094420	MAVERICK Half Pin SS 4 x 100 x 20mm
71094435	MAVERICK Half Pin SS 4 x 100 x 35mm
71094535	MAVERICK Half Pin SS 5 x 160 x 35mm
71094555	MAVERICK Half Pin SS 5 x 160 x 55mm
71094545	MAVERICK Half Pin SS 5 x 200 x 45mm
71094565	MAVERICK Half Pin SS 5 x 200 x 65mm
71094585	MAVERICK Half Pin SS 5 x 250 x 85mm
71094655	MAVERICK Half Pin SS 6 x 200 x 55mm
71094695	MAVERICK Half Pin SS 6 x 250 x 95mm
71094575	MAVERICK Transfixing Pin SS 5mm x 275mm



MAVERICK Drills

**Reference**    **Description**

71094024	MAVERICK Short Drill 2.4mm for 3mm Pin
71094032	MAVERICK Short Drill 3.2mm for 4mm Pin
71094040	MAVERICK Medium Drill 4.0mm for 5mm x 160mm Pin
71094140	MAVERICK Long Drill 4.0mm for 5mm x 200mm & 250mm Pin
71094145	MAVERICK Long Drill 4.5mm for 6mm Pin

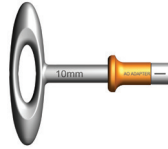




## MAVERICK® Instruments

Reference	Description
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71094101	MAVERICK AO T-Handle 10mm
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71094102	MAVERICK Ratchet Wrench 10mm
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71094103	MAVERICK Tissue Protector Handle
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71094104	MAVERICK Afterburner
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71094105	MAVERICK T-Handle 10mm Long
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71094151	MAVERICK Tissue Protector Short
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71094152	MAVERICK Tissue Protector Medium
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71094153	MAVERICK Tissue Protector Long
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71094155	MAVERICK Tissue Protector Transfixing Pin
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71094156	MAVERICK Tissue Protector 6mm
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MAVERICK Instruments

**Reference**   **Description**

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71094161   MAVERICK Trocar Short



71094162   MAVERICK Trocar Medium



71094163   MAVERICK Trocar Long



71094165   MAVERICK Trocar Transfixing Pin



71094166   MAVERICK Trocar 6mm



## The following JET-X<sup>◊</sup> Components are compatible with MAVERICK<sup>◊</sup> Unilateral External Fixation

### JET-X General Instruments

Reference	Description
71067326	AO T-Handle with 10mm Socket
71063004	AO to Hall Adapter
71063005	AO to Trinkle Adapter
71063015	10mm Open End Wrench
71067322	10mm Ratchet Wrench

### JET-X Pin Instruments

Reference	Description
71067310	Tissue Protector Handle
71067306	5mm/6mm Trocar Long
71067307	5mm/6mm Trocar Short
71067308	5mm/6mm Trocar X-Short
71067312	5mm/6mm Tissue Protector Long
71067313	5mm/6mm Tissue Protector Short
71067314	5mm/6mm Tissue Protector X-Short
71063017	5mm Cannulated Pin Tissue Protector
71063018	3.5mm Cannulated Pin Drill Sleeve

### JET-X Drills

Reference	Description
71067317S	Drill for X-Short 5mm Half Pin sterile
71067318S	Drill for Short 5mm Half Pin sterile
71067319S	Drill for Long 5mm Half Pin sterile
71067320S	Drill for Short 6mm Half Pin sterile
71067321S	Drill for Long 6mm Half Pin sterile
71063013	3.5mm/1.6mm Cannulated Drill
71063026	JET-X 4.8mm Short Graduated Step Drill
71063028	JET-X 3.5mm Short Graduated Step Drill

### JET-X 10.5mm Bars

Reference	Description
71062100	100mm Bar
71062150	150mm Bar
71062200	200mm Bar
71062250	250mm Bar
71062300	300mm Bar
71062350	350mm Bar
71062400	400mm Bar
71062500	500mm Bar
71062600	600mm Bar Sterile
71062160	JET-X L Bar
71062180	JET-X V Bar

JET-X<sup>®</sup> Sterile Pins

Reference	Description
71063108S	3mm x 10mm TiN Half Pin sterile
71063158S	3mm x 15mm TiN Half Pin sterile
71063208S	3mm x 20mm TiN Half Pin sterile
71063258S	3mm x 25mm TiN Half Pin sterile
71064158S	4mm x 15mm TiN Half Pin sterile
71064208S	4mm x 20mm TiN Half Pin sterile
71064258S	4mm x 25mm TiN Half Pin sterile
71064308S	4mm x 30mm TiN Half Pin sterile
71064358S	4mm x 35mm TiN Half Pin sterile
71065304S	5mm x 30mm TiN X-Short Half Pin sterile
71065308S	5mm x 30mm TiN Short Half Pin sterile
71065309S	5mm x 30mm TiN Long Half Pin sterile
71065354S	5mm x 35mm TiN X-Short Half Pin sterile
71065358S	5mm x 35mm TiN Short Half Pin sterile
71065359S	5mm x 35mm TiN Long Half Pin sterile
71065404S	5mm x 40mm TiN X-Short Half Pin sterile
71065407S	5mm x 40mm TiN Half Pin 1.6 Can sterile
71065408S	5mm x 40mm TiN Short Half Pin sterile
71065409S	5mm x 40mm TiN Long Half Pin sterile
71065454S	5mm x 45mm TiN X-Short Half Pin sterile
71065458S	5mm x 45mm TiN Short Half Pin sterile
71065459S	5mm x 45mm TiN Long Half Pin sterile
71065504S	5mm x 50mm TiN Short Traction Pin sterile
71065507S	5mm x 50mm TiN Traction Pin sterile
71065508S	5mm x 50mm TiN Short Half Pin sterile
71065509S	5mm x 50mm TiN Long Half Pin sterile
71065558S	5mm x 55mm TiN Short Half Pin sterile
71065559S	5mm x 55mm TiN Long Half Pin sterile
71065608S	5mm x 60mm TiN Short Half Pin sterile
71065609S	5mm x 60mm TiN Long Half Pin sterile
71065658S	5mm x 65mm TiN Short Half Pin sterile
71065659S	5mm x 65mm TiN Long Half Pin sterile
71065708S	5mm x 70mm TiN Short Half Pin sterile
71065709S	5mm x 70mm TiN Long Half Pin sterile
71066409S	6mm x 40mm TiN Half Pin sterile
71066459S	6mm x 45mm TiN Half Pin sterile
71066509S	6mm x 50mm TiN Half Pin sterile
71066559S	6mm x 55mm TiN Half Pin sterile
71066609S	6mm x 60mm TiN Half Pin sterile

JET-X Titanium Pins

Reference	Description
71055201	JET-X Ti 5mm x 20mm Short Half Pin
71055202	JET-X Ti 5mm x 20mm Long Half Pin
71055251	JET-X Ti 5mm x 25mm Short Half Pin
71055301	JET-X Ti 5mm x 30mm Short Half Pin
71055351	JET-X Ti 5mm x 35mm Short Half Pin
71055401	JET-X Ti 5mm x 40mm Short Half Pin
71055451	JET-X Ti 5mm x 45mm Short Half Pin
71055501	JET-X Ti 5mm x 50mm Short Half Pin
71055503	JET-X Ti 5mm x 50mm TracTion Pin
71055551	JET-X Ti 5mm x 55mm Short Half Pin
71055601	JET-X Ti 5mm x 60mm Short Half Pin
71055701	JET-X Ti 5mm x 70mm Short Half Pin
71056208	JET-X Ti 6mm x 20mm Short Half Pin
71056258	JET-X Ti 6mm x 25mm Short Half Pin
71056308	JET-X Ti 6mm x 30mm Short Half Pin
71056358	JET-X Ti 6mm x 35mm Short Half Pin
71056408	JET-X Ti 6mm x 40mm Short Half Pin
71056409	JET-X Ti 6mm x 40mm Short Half Pin
71056458	JET-X Ti 6mm x 45mm Short Half Pin
71056459	JET-X Ti 6mm x 45mm Long Half Pin
71056508	JET-X Ti 6mm x 50mm Short Half Pin
71056558	JET-X Ti 6mm x 55mm Short Half Pin
71056608	JET-X Ti 6mm x 60mm Short Half Pin
71056658	JET-X Ti 6mm x 65mm Short Half Pin
71056708	JET-X Ti 6mm x 70mm Short Half Pin

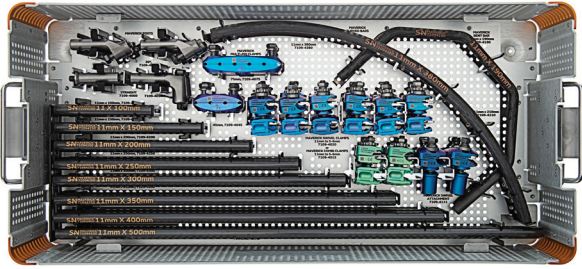
JET-X Pin Caps

Reference	Description
71062007	5mm Pin Caps
71062017	4mm Pin Caps

## MAVERICK<sup>®</sup> Instrument and implant trays

### MAVERICK Base Tray instruments and implants

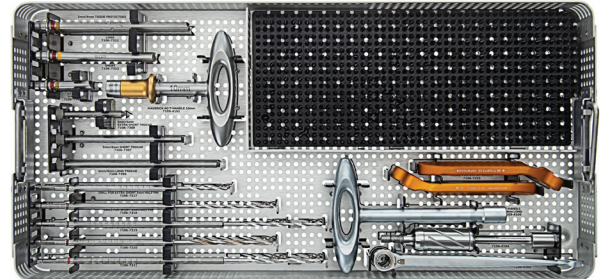
71094000A + 71094000 or 71094001



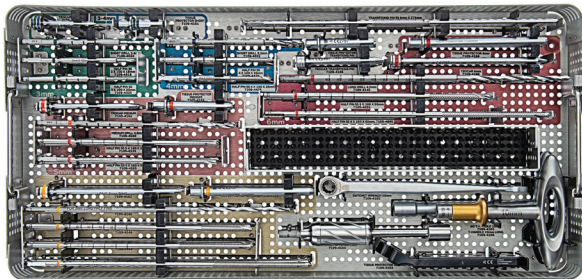
**Deep Tray**  
MAVERICK Bars and Clamps  
Tray can accept Swivel or Combi  
71094011

### MAVERICK / JET-X<sup>®</sup> Hybrid Tray

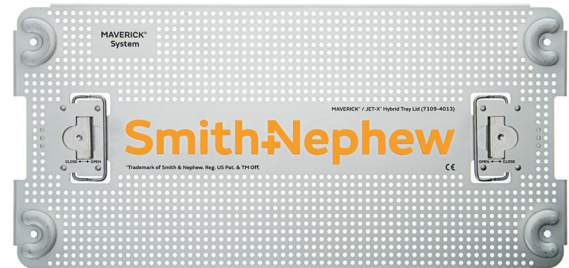
71094003A + 71094003



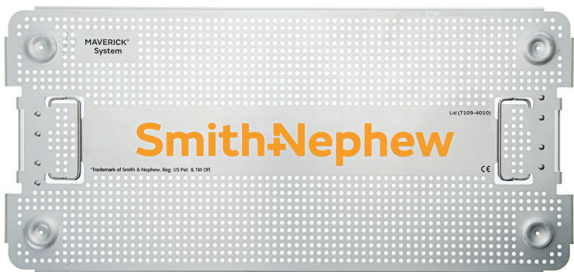
**Tray Insert**  
JET-X Pin Instruments  
MAVERICK General Instruments  
Fits in Tray 71094011  
71094014



**Tray Insert**  
Pins, Instruments, Drills  
71094012



**Optional – Lid for Tray 71094014**  
71094013



**Lid for Tray 71094011**  
71094010

## Tray layout

### MAVERICK Unilateral External Fixation instruments and implants with Swivel Clamp option

<b>71094000A</b>	<b>MAVERICK full set instruments</b>	<b>Set Qty</b>
71094101	MAVERICK AO T-Handle 10mm	1
71094102	MAVERICK Ratchet Wrench 10mm	1
71094103	MAVERICK Tissue Protector Handle	1
71094104	MAVERICK Afterburner	1
71094105	MAVERICK T-Handle 10mm Long	1
71094151	MAVERICK Tissue Protector Short	2
71094152	MAVERICK Tissue Protector Medium	2
71094153	MAVERICK Tissue Protector Long	2
71094155	MAVERICK Tissue Protector Transfixing Pin	2
71094156	MAVERICK Tissue Protector 6mm	2
71094161	MAVERICK Trocar Short	2
71094162	MAVERICK Trocar Medium	2
71094163	MAVERICK Trocar Long	2
71094165	MAVERICK Transfixing Pin Trocar	2
71094166	MAVERICK Trocar 6mm	2
71094010	MAVERICK Tray Lid	1
71094011	MAVERICK Bars and Clamps Tray	1
71094012	MAVERICK Pins and Instruments Tray	1

<b>71094000</b>	<b>MAVERICK full set implants Swivel Clamp</b>	<b>Set Qty</b>
71094020	MAVERICK Swivel Clamp 11mm to 5-6mm	16
71094111	MAVERICK Swivel Attachment	4
71094045	MAVERICK Multi-Pin Clamp 45mm	2
71094075	MAVERICK Multi-Pin Clamp 75mm	2
71094060	MAVERICK Post Straight	2
71094030	MAVERICK Post 30°	4
71094090	MAVERICK Post 90°	2
71094100	MAVERICK Bar 11mm x 100mm	2
71094150	MAVERICK Bar 11mm x 150mm	2
71094200	MAVERICK Bar 11mm x 200mm	3
71094250	MAVERICK Bar 11mm x 250mm	3
71094300	MAVERICK Bar 11mm x 300mm	3
71094350	MAVERICK Bar 11mm x 350mm	3
71094400	MAVERICK Bar 11mm x 400mm	3
71094500	MAVERICK Bar 11mm x 500mm	3
71094190	MAVERICK BENT Bar 11mm x 190mm	1
71094210	MAVERICK CURVED Bar 11mm x 210mm	1
71094380	MAVERICK CURVED Bar 11mm x 380mm	1
71094315	MAVERICK Half Pin SS 3 x 100 x 15mm	2
71094325	MAVERICK Half Pin SS 3 x 100 x 25mm	2
71094420	MAVERICK Half Pin SS 4 x 100 x 20mm	2
71094435	MAVERICK Half Pin SS 4 x 100 x 35mm	2
71094535	MAVERICK Half Pin SS 5 x 160 x 35mm	4
71094555	MAVERICK Half Pin SS 5 x 160 x 55mm	4
71094545	MAVERICK Half Pin SS 5 x 200 x 45mm	4
71094565	MAVERICK Half Pin SS 5 x 200 x 65mm	4
71094585	MAVERICK Half Pin SS 5 x 250 x 85mm	4
71094655	MAVERICK Half Pin SS 6 x 200 x 55mm	2
71094695	MAVERICK Half Pin SS 6 x 250 x 95mm	2
71094575	MAVERICK Transfixing Pin SS 5mm x 275mm	2
71094024	MAVERICK Short Drill 2.4mm	2
71094032	MAVERICK Short Drill 3.2mm	2
71094040	MAVERICK Medium Drill 4.0mm	2
71094140	MAVERICK Long Drill 4.0mm	2
71094145	MAVERICK Long Drill 4.5mm	2

## MAVERICK<sup>®</sup> Unilateral External Fixation instruments and implants with Combi Clamp option

71094000A	MAVERICK full set instruments	Set Qty
71094101	MAVERICK AO T-Handle 10mm	1
71094102	MAVERICK Ratchet Wrench 10mm	1
71094103	MAVERICK Tissue Protector Handle	1
71094104	MAVERICK Afterburner	1
71094105	MAVERICK T-Handle 10mm Long	1
71094151	MAVERICK Tissue Protector Short	2
71094152	MAVERICK Tissue Protector Medium	2
71094153	MAVERICK Tissue Protector Long	2
71094155	MAVERICK Tissue Protector Transfixing Pin	2
71094156	MAVERICK Tissue Protector 6mm	2
71094161	MAVERICK Trocar Short	2
71094162	MAVERICK Trocar Medium	2
71094163	MAVERICK Trocar Long	2
71094165	MAVERICK Transfixing Pin Trocar	2
71094166	MAVERICK Trocar 6mm	2
71094010	MAVERICK Tray Lid	1
71094011	MAVERICK Bars and Clamps Tray	1
71094012	MAVERICK Pins and Instruments Tray	1

71094001	MAVERICK <sup>®</sup> full set implants Combi Clamp	Set Qty
71094015	MAVERICK Combi Clamp 11mm to 5-6mm	16
71094111	MAVERICK Swivel Attachment	4
71094045	MAVERICK Multi-Pin Clamp 45mm	2
71094075	MAVERICK Multi-Pin Clamp 75mm	2
71094060	MAVERICK Post Straight	2
71094030	MAVERICK Post 30°	4
71094090	MAVERICK Post 90°	2
71094100	MAVERICK Bar 11mm x 100mm	2
71094150	MAVERICK Bar 11mm x 150mm	2
71094200	MAVERICK Bar 11mm x 200mm	3
71094250	MAVERICK Bar 11mm x 250mm	3
71094300	MAVERICK Bar 11mm x 300mm	3
71094350	MAVERICK Bar 11mm x 350mm	3
71094400	MAVERICK Bar 11mm x 400mm	3
71094500	MAVERICK Bar 11mm x 500mm	3
71094190	MAVERICK BENT Bar 11mm x 190mm	1
71094210	MAVERICK CURVED Bar 11mm x 210mm	1
71094380	MAVERICK CURVED Bar 11mm x 380mm	1
71094315	MAVERICK Half Pin SS 3 x 100 x 15mm	2
71094325	MAVERICK Half Pin SS 3 x 100 x 25mm	2
71094420	MAVERICK Half Pin SS 4 x 100 x 20mm	2
71094435	MAVERICK Half Pin SS 4 x 100 x 35mm	2
71094535	MAVERICK Half Pin SS 5 x 160 x 35mm	4
71094555	MAVERICK Half Pin SS 5 x 160 x 55mm	4
71094545	MAVERICK Half Pin SS 5 x 200 x 45mm	4
71094565	MAVERICK Half Pin SS 5 x 200 x 65mm	4
71094585	MAVERICK Half Pin SS 5 x 250 x 85mm	4
71094655	MAVERICK Half Pin SS 6 x 200 x 55mm	2
71094695	MAVERICK Half Pin SS 6 x 250 x 95mm	2
71094575	MAVERICK Transfixing Pin SS 5mm x 275mm	2
71094024	MAVERICK Short Drill 2.4mm	2
71094032	MAVERICK Short Drill 3.2mm	2
71094040	MAVERICK Medium Drill 4.0mm	2
71094140	MAVERICK Long Drill 4.0mm	2
71094145	MAVERICK Long Drill 4.5mm	2

## MAVERICK Unilateral External Fixation instruments and implants with Swivel and Combi Clamp option

<b>71094000A</b>	<b>MAVERICK full set instruments</b>	<b>Set Qty</b>
71094101	MAVERICK AO T-Handle 10mm	1
71094102	MAVERICK Ratchet Wrench 10mm	1
71094103	MAVERICK Tissue Protector Handle	1
71094104	MAVERICK Afterburner	1
71094105	MAVERICK T-Handle 10mm Long	1
71094151	MAVERICK Tissue Protector Short	2
71094152	MAVERICK Tissue Protector Medium	2
71094153	MAVERICK Tissue Protector Long	2
71094155	MAVERICK Tissue Protector Transfixing Pin	2
71094156	MAVERICK Tissue Protector 6mm	2
71094161	MAVERICK Trocar Short	2
71094162	MAVERICK Trocar Medium	2
71094163	MAVERICK Trocar Long	2
71094165	MAVERICK Transfixing Pin Trocar	2
71094166	MAVERICK Trocar 6mm	2
71094010	MAVERICK Tray Lid	1
71094011	MAVERICK Bars and Clamps Tray	1
71094012	MAVERICK Pins and Instruments Tray	1

<b>71094005</b>	<b>MAVERICK full set implants with Swivel and Combi Clamps</b>	<b>Set Qty</b>
71094020	MAVERICK Swivel Clamp 11mm to 5-6mm	8
71094015	MAVERICK Combi Clamp 11mm to 5-6mm	8
71094111	MAVERICK Swivel Attachment	4
71094045	MAVERICK Multi-Pin Clamp 45mm	2
71094075	MAVERICK Multi-Pin ClamP 75mm	2
71094060	MAVERICK Post Straight	2
71094030	MAVERICK Post 30°	4
71094090	MAVERICK Post 90°	2
71094315	MAVERICK Half Pin SS 3 X 100 X 15mm	2
71094325	MAVERICK Half Pin SS 3 X 100 X 25mm	2
71094420	MAVERICK Half Pin SS 4 X 100 X 20mm	2
71094435	MAVERICK Half Pin SS 4 X 100 X 35mm	2
71094535	MAVERICK Half Pin SS 5 X 160 X 35mm	4
71094555	MAVERICK Half Pin SS 5 X 160 X 55mm	4
71094545	MAVERICK Half Pin SS 5 X 200 X 45mm	4
71094565	MAVERICK Half Pin SS 5 X 200 X 65mm	4
71094585	MAVERICK Half Pin SS 5 X 250 X 85mm	4
71094655	MAVERICK Half Pin SS 6 X 200 X 55mm	2
71094695	MAVERICK Half Pin SS 6 X 250 X 95mm	2
71094575	MAVERICK Transfixing Pin SS 5mm X 275mm	2
71094024	MAVERICK Short Drill 2.4mm	2
71094032	MAVERICK Short Drill 3.2mm	2
71094040	MAVERICK Medium Drill 4.0mm	2
71094140	MAVERICK Long Drill 4.0mm	2
71094145	MAVERICK Long Drill 4.5mm	2
71094100	MAVERICK Bar 11mm x 100mm	2
71094150	MAVERICK Bar 11mm x 150mm	2
71094200	MAVERICK Bar 11mm x 200mm	3
71094250	MAVERICK Bar 11mm x 250mm	3
71094300	MAVERICK Bar 11mm x 300mm	3
71094350	MAVERICK Bar 11mm x 350mm	3
71094400	MAVERICK Bar 11mm x 400mm	3
71094500	MAVERICK Bar 11mm x 500mm	3
71094190	MAVERICK BENT Bar 11mm x 190mm	1
71094210	MAVERICK Curved Bar 11mm x 210mm	1
71094380	MAVERICK Curved Bar 11mm x 380mm	1



## MAVERICK<sup>◊</sup> and JET-X<sup>◊</sup> instruments

<b>71094003A</b>	<b>MAVERICK – JET-X instruments only</b>	<b>Set Qty</b>
71067306	5mm/6mm Long Trocar	2
71067307	5mm/6mm Short Trocar	2
71067308	5mm/6mm X-Short Trocar	2
71067310	Tissue Protector Handle	2
71067312	5mm/6mm Tissue Protector for Long HP	2
71067313	5mm/6mm Tissue Protector for Short HP	2
71067314	5mm/6mm Tissue Protector for X-Short HP	2
71094101	MAVERICK AO T-Handle 10mm	1
71094102	MAVERICK Ratchet Wrench 10mm	1
71094104	MAVERICK Afterburner	1
71094105	MAVERICK T-Handle 10mm Long	1
71094014	MAVERICK – JET-X Hybrid Tray	1
71094010	MAVERICK Tray Lid	1
71094011	MAVERICK Bars and Clamps Tray	1

<b>71094003</b>	<b>MAVERICK<sup>◊</sup> Full set implants – use with 71094003A</b>	<b>Set Qty</b>
71094015	MAVERICK Combi Clamp 11mm to 5-6mm	8
71094020	MAVERICK Swivel Clamp 11mm to 5-6mm	8
71094111	MAVERICK Swivel Attachment	4
71094045	MAVERICK Multi Pin Clamp 45mm	2
71094075	MAVERICK Multi Pin Clamp 75mm	2
71094060	MAVERICK Post Straight	2
71094030	MAVERICK Post 30°	4
71094090	MAVERICK Post 90°	2
71094100	MAVERICK Bar 11mm x 100mm	2
71094150	MAVERICK Bar 11mm x 150mm	2
71094200	MAVERICK Bar 11mm x 200mm	3
71094250	MAVERICK Bar 11mm x 250mm	3
71094300	MAVERICK Bar 11mm x 300mm	3
71094350	MAVERICK Bar 11mm x 350mm	3
71094400	MAVERICK Bar 11mm x 400mm	3
71094500	MAVERICK Bar 11mm x 500mm	3
71094190	MAVERICK BENT Bar 11mm x 190mm	1
71094210	MAVERICK CURVED Bar 11mm x 210mm	1

<b>71094003</b>	<b>MAVERICK Full set implants – use with 71094003A</b>	<b>Set Qty</b>
71094380	MAVERICK CURVED Bar 11mm x 380mm	1
71067317	Drill for X-Short 5mm Half Pin sterile	2
71067318	Drill for Short 5mm Half Pin sterile	2
71067319	Drill for Long 5mm Half Pin sterile	2
71067320	Drill for Short 6mm Half Pin sterile	2
71067321	Drill for Long 6mm Half Pin sterile	2
71065304S	5mm x 30mm TiN X-Short Half Pin sterile	2
71065354S	5mm x 35mm TiN X-Short Half Pin sterile	2
71065404S	5mm x 40mm TiN X-Short Half Pin sterile	2
71065454S	5mm x 45mm TiN X-Short Half Pin sterile	0
71065308S	5mm x 30mm TiN Short Half Pin sterile	4
71065358S	5mm x 35mm TiN Short Half Pin sterile	4
71065408S	5mm x 40mm TiN Short Half Pin sterile	4
71065458S	5mm x 45mm TiN Short Half Pin sterile	2
71065504S	5mm x 50mm TiN Short Traction Pin sterile	0
71065508S	5mm x 50mm TiN Short Half Pin sterile	0
71065558S	5mm x 55mm TiN Short Half Pin sterile	0
71065608S	5mm x 60mm TiN Short Half Pin sterile	0
71065658S	5mm x 65mm TiN Short Half Pin sterile	0
71065708S	5mm x 70mm TiN Short Half Pin sterile	0
71065309S	5mm x 30mm TiN Long Half Pin sterile	2
71065359S	5mm x 35mm TiN Long Half Pin sterile	2
71065409S	5mm x 40mm TiN Long Half Pin sterile	2
71065459S	5mm x 45mm TiN Long Half Pin sterile	0
71065509S	5mm x 50mm TiN Long Half Pin sterile	2
71065559S	5mm x 55mm TiN Long Half Pin sterile	0
71065609S	5mm x 60mm TiN Long Half Pin sterile	2
71065659S	5mm x 65mm TiN Long Half Pin sterile	0
71065709S	5mm x 70mm TiN Long Half Pin sterile	2
71066409S	6mm x 40mm TiN Half Pin sterile	2
71066459S	6mm x 45mm TiN Half Pin sterile	0
71066509S	6mm x 50mm TiN Half Pin sterile	2
71066559S	6mm x 55mm TiN Half Pin sterile	0
71066609S	6mm x 60mm TiN Half Pin sterile	2
71065507S	5mm x 50mm TiN Traction Pin sterile	1
71065407S	5mm x 40mm TiN Half Pin 1.6mm Cannulated sterile	1



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#### References

1. Justification in lieu of MRI Compatibility Testing for the MAVERICK External Fixation System. December 1, 2021. Technical Memo. TM-21-200