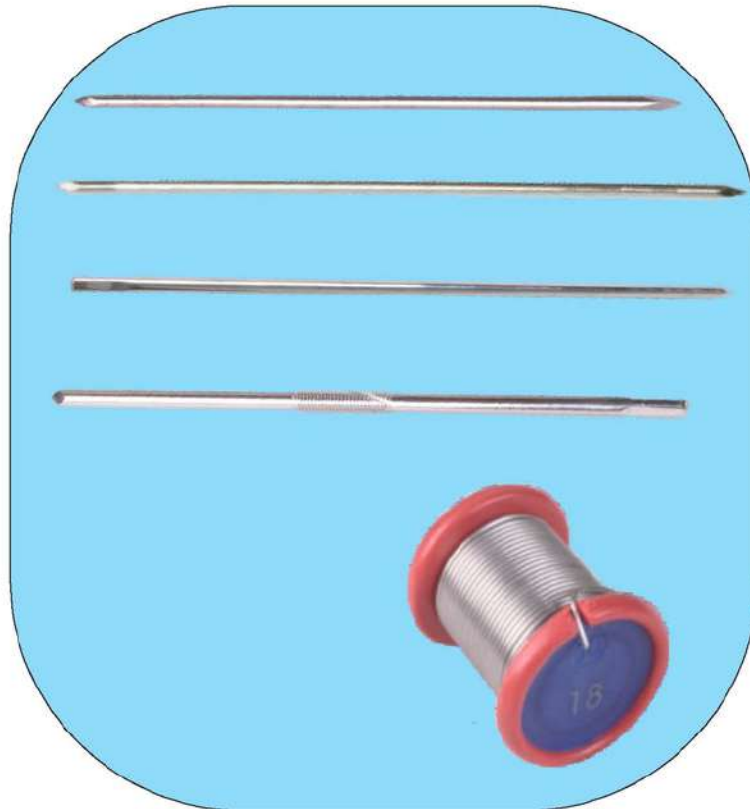


## Pins & Wires Surgical Technique



Doc No	Issue No/Rev No	Dated	Page No
F/Ortho/ST/13	01/00	24-04-2019	Page 1 of 14

## Pins & Wires Surgical Technique

### Indications and Contraindications

#### Wires Indication:

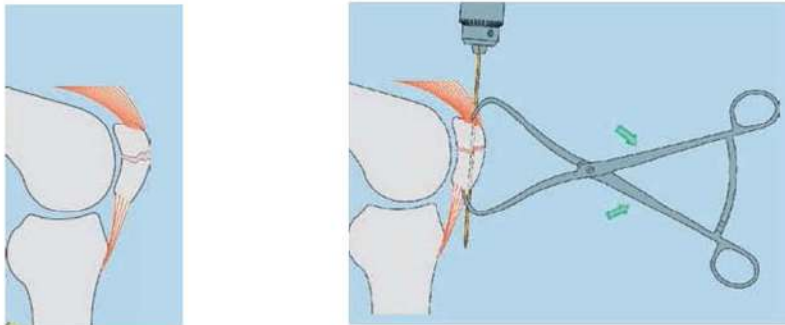
Wire implants are indicated for a wide range of orthopedic trauma applications including:

- Stand-alone device for fracture fixation
- Fracture fixation in conjunction use with other fixation systems
- For temporary holding bony fragments

#### S.S. Wire Reels Indications:

- Orthopedic trauma surgery (incl. periprosthetic fractures, femur fractures, olecranon fractures, patella fractures, humerus and ankle fractures)
- Acromio clavicular dislocation
- Hip and acetabular fractures
- Prophylactic banding in total joint replacements
- Temporary fixation during open reductions
- Reattachment of the greater trochanter following osteotomy in total hip arthroplasty or fractures

### Steps for S.S. Wiring Technique

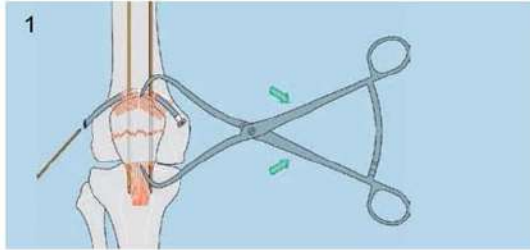


**Note:** The wire implants are multifunctional devices. The following techniques describe two possible applications of the wire implants.

Doc No	Issue No/Rev No	Dated	Page No
F/Ortho/ST/13	01/00	24-04-2019	Page <b>2</b> of <b>14</b>

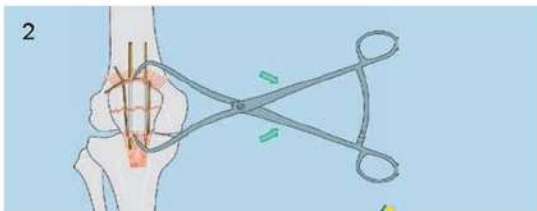
## Pins & Wires Surgical Technique

### 1. Reduce fracture



Reduce fracture with large reduction forceps with points. Preliminary fix it with two parallel 1.5 to 2mm K wires.

### 2. Insert S.S. wires:



Pass the S.S. wires through the ligamentous structures and around the K wires close to the bone. To do so, it may be helpful to use a curved large bore needle, cannula or wire passer.

(1) The S.S. wire should lie anteriorly to the patella so as to act as a tension band.



(2) A circular wire is preferable to a figure-of-eight. The lateral view demonstrates the tension band principle, where by flexing the knee, tensile forces are converted into compressive ones (arrows).

Doc No	Issue No/Rev No	Dated	Page No
F/Ortho/ST/13	01/00	24-04-2019	Page 3 of 14

## Pins & Wires Surgical Technique

### 3. Implant removal

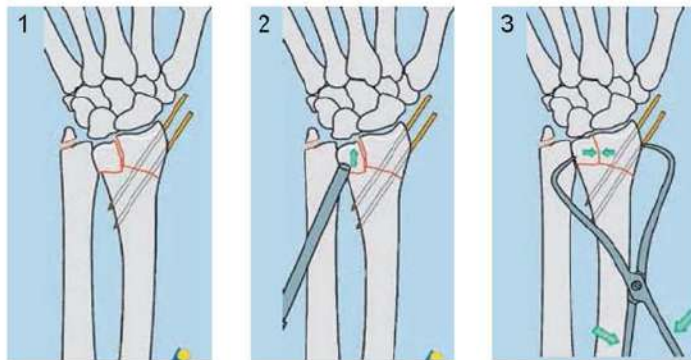
In case the physician decides to remove the implants, implants can be removed by using general surgical instruments like Plier, Wire Cutter/Bender/ Plier etc.

**Note:** The final decision of removing the Pins or wires shall be taken by the operating surgeon only. It is recommended that the implant used as an aid for healing should be removed once its service is over after proper consultation and examination by the operating surgeon in final follow up, particularly in younger and more active patients.

### Steps for Percutaneous Pinning:

If closed or percutaneous reduction is possible and low forces exist like in upper extremity, the fracture may be stabilized with percutaneous pinning. The following section describes step by step the percutaneous reduction and K wire fixation for the treatment of a C1 distal radius fracture.

#### 1. Reduce fracture



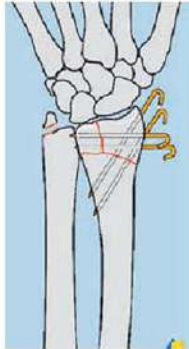
Fragments that can be easily reduced can be fixed by percutaneous pinning. Certain fragments need to be reduced with the help of an awl or a periosteal elevator through a small skin incision with a minimum of soft-tissue dissection.

Doc No	Issue No/Rev No	Dated	Page No
F/Ortho/ST/13	01/00	24-04-2019	Page 4 of 14

## Pins & Wires Surgical Technique

### 2. Perform percutaneous pinning

If the fragment is correctly reduced, perform percutaneous pinning.



### 3. Implant removal

In case the physician decides to remove the implant, it can be removed by using general surgical instruments like pliers and K wire Bender/Cutter/Plier.

**Note: The final decision of removing the Pins or wires shall be taken by the operating surgeon only. It is recommended that the implant used as an aid for healing should be removed once its service is over after proper consultation and examination by the operating surgeon in final follow up, particularly in younger and more active patients.**

Doc No	Issue No/Rev No	Dated	Page No
F/Ortho/ST/13	01/00	24-04-2019	Page 5 of 14



## Pins & Wires Surgical Technique

### **CAUTION:**

#### **Used Implants:**

Used implants which appear un-damaged may have internal and/or external defects. It is possible that individual stress analysis of each part fail to reveal the accumulated stress on the metals as a result of use within the body. This may lead ultimately to implant failure after certain point of time due to metal fatigue. Therefore reuses of implants are strictly not recommended.

#### **Disposal of Used Implants:**

Every used or removed implant must be discarded after use and must never be re-used. It should be bent or scratched & then disposed of properly so that it becomes unfit for reuse. While disposing it off, it should be ensured that the discarded implant does not pose any threat to children, stray animals and environment. Dispose of the implants as per applicable medical practices and local, state and country specific regulatory requirement of Bio Medical Waste rules.

### **PACKAGING MATERIAL DISPOSAL:**

The packaging material of this device is made of LDPE and therefore if swallowed, may cause choking Hazards. Therefore, it should be disposed of in such ways that keep out of reach of children and stray animals.

### **SINGLE BRAND USAGE:**

Implant components from one manufacture should not be used with those of another. Implants from each manufacture may have metal, dimensions and design differences so that the use in conjunction with different brands of devices may lead to inadequate fixation or adverse performances of the devices.

### **MRI SAFETY INFORMATION**

- Ortho Max Mfg. Co Pvt. Ltd. implants are manufactured from Titanium Gr.2, SS316L, SS316LVM material for Bone Plate & Titanium Gr.5, SS316L, SS316LVM material for Bone Screw, Pins & Wires, both are non-magnetic material, hence it do not pose any safety risk.

Doc No	Issue No/Rev No	Dated	Page No
F/Ortho/ST/13	01/00	24-04-2019	Page 6 of 14

## **Pins & Wires Surgical Technique**

- Patients should be directed to seek a medical opinion before entering potentially adverse environments that could affect the performance of the implants, such as electromagnetic or magnetic field or including a magnetic resonance environment.
- Doctor shall conduct a Risk Benefit Analysis before directing the patient to enter electromagnetic or magnetic fields or including a magnetic resonance environment.
- The Ortho Max Mfg. Co Pvt. Ltd. implants has not been evaluated for safety and compatibility in the MR environment but on the basis of literature study below mentioned points can be taken care during MRI

The minimum recommended time after the implantation that allows patients to safely undergo MRI examination or allowing the patient or an individual to enter the MRI environment is 6 (six) weeks.

The maximum recommended time limit for MRI examination in patients implanted with the evaluated device is 30 min with a scanner operating at 1.5T (Tesla) or less.

### **END OF SURGICAL TECHNIQUE**


Doc No	Issue No/Rev No	Dated	Page No
F/Ortho/ST/13	01/00	24-04-2019	Page 7 of 14

## Pins & Wires Surgical Technique

### Product Details:

### Others Implants


#### K Wires Double Ended - Trocar Point



Size	S.S.	Titanium
1.0 mm x 6"	153.106	-
1.2 mm x 6"	153.126	-
1.5 mm x 6"	153.156	-
1.8 mm x 6"	153.186	-
2.0 mm x 6"	153.206	-
2.5 mm x 6"	153.256	-
3.0 mm x 6"	153.306	-
1.2 mm x 9"	153.129	-
1.5 mm x 9"	153.159	-
1.8 mm x 9"	153.189	-
2.0 mm x 9"	153.209	-
2.5 mm x 9"	153.259	-
3.0 mm x 9"	153.309	-
1.5 mm x 12"	153.1512	-
1.8 mm x 12"	153.1812	-
2.0 mm x 12"	153.2012	-
2.5 mm x 12"	153.2512	-
3.0 mm x 12"	153.3012	-

Intended Use	For holding the bony fragment of mandible, finger, metacarpal or wrist
Profile	Sharp Trocar Point
Material	SS 316L


#### K Wire - Threaded End



Size	S.S.	Titanium
1.0 mm x 6"	154.106	-
1.2 mm x 6"	154.126	-
1.5 mm x 6"	154.156	-
1.8 mm x 6"	154.186	-
2.0 mm x 6"	154.206	-
2.5 mm x 6"	154.256	-
3.0 mm x 6"	154.306	-
1.2 mm x 9"	154.129	-
1.5 mm x 9"	154.159	-
1.8 mm x 9"	154.189	-
2.0 mm x 9"	154.209	-
2.5 mm x 9"	154.259	-
3.0 mm x 9"	154.309	-

Intended Use	For holding the bony fragment of mandible, finger, metacarpal or wrist
Profile	Sharp Trocar Point, 16mm Thread Length
Material	SS 316L

16


**Ortho Max**<sup>®</sup>  
Mfg. Co. Pvt. Ltd.



## Pins & Wires Surgical Technique

### Others Implants

#### Square Nails For Radius



Available Size	S.S.
2 mm X 18cm To 30cm	155.218R To 155.230R
2.5mm X 18cm To 30cm	155.2518R To 155.2530R
3mm X 20cm To 30cm	155.320R To 155.330R
3.5mm X 20cm To 30cm	155.3520R To 155.3530R
4 mm X 24cm To 30cm	155.424R To 155.430R
4.5 mm X 24cm To 30cm	155.4524R To 155.4530R
5mm X 24cm To 30cm	155.524R To 155.530R

#### Square Nails For Ulna



Available Size	S.S.
2 mm X 18cm To 30cm	155.218U To 155.230U
2.5mm X 18cm To 30cm	155.2518U To 155.2530U
3mm X 20cm To 30cm	155.320U To 155.330U
3.5mm X 20cm To 30cm	155.3520U To 155.3530U
4 mm X 24cm To 30cm	155.424U To 155.430U
4.5 mm X 24cm To 30cm	155.4524U To 155.4530U
5mm X 24cm To 30cm	155.524U To 155.530U

#### Rush Nails



Available Size	S.S.
2 mm X 15cm To 30cm	156.215 To 156.230
2.5mm X 15cm To 30cm	156.2515 To 156.2530
3mm X 18cm To 30cm	156.318 To 156.330
3.5mm X 18cm To 30cm	156.3518 To 156.3530
4 mm X 24cm To 30cm	156.424 To 156.430
4.5 mm X 24cm To 30cm	156.4524 To 156.4530
5 mm X 26cm To 30cm	156.526 To 156.530
6 mm x 26cm To 30cm	156.626 To 156.630

#### Lambrinudi Wires



Size	S.S.
2 mm x 30cm	158.230
2.5 mm x 30cm	158.2530
3 mm x 30cm	158.330
3.5mm x 30cm	158.3530
4 mm x 30cm	158.430
4.5 mm x 30cm	158.4530

#### Denham Pins



Size	S.S.
3.5 mm Shaft	155.350
4.5 mm Shaft	155.450

Intended Use	For Stabilization of Fracture , Bone Fragment & Traction
Profile	Centre Thread 4mm x 38mm, 5.5mm x 38mm , 9" Length
Material	SS 316L

## Pins & Wires Surgical Technique

### Others Implants

#### Steinman pins

Size	S.S.
2.5 mm x 6"	160.256
3 mm x 6"	160.306
3 mm x 9"	160.309
3.5 mm x 9"	160.359
4 mm x 9"	160.409
4.5mm x 9"	160.459
5 mm x 10"	160.510
6 mm x 10"	160.610



Intended Use	For Stabilization of Fracture , Bone Fragment & Traction
Profile	Sharp Trocar Points
Material	SS 316L

#### Schanz Screws

Size	S.S.	Profile
1.5 mm x 3"	161.153	12mm Thread
2 mm x 3"	161.203	12mm Thread
2.5 mm x 4"	161.254	12mm Thread
3.5 mm x 6"	161.356	4mm Shaft, 16mm Thread
4.5 mm x 8"	161.458	5mm Shaft, 22mm Thread



Intended Use	For Fixation of Fracture Fragment to be used with external fixator clamps
Profile	-
Material	SS 316L

#### S.S. Wire Reel



Size	S.S.
16 Gauge	165.016
18 Gauge	165.018
19 Gauge	165.019
20 Gauge	165.020
22 Gauge	165.022

Intended Use	For Tension Band Wiring of different parts of skeleton
Profile	-
Material	SS 316L

## Pins & Wires Surgical Technique

### Others Implants

#### Schanz Screws Long Thread



Size	S.S.
4.5 mm x 10"	161.4510

Intended Use	For Fixation of Fracture Fragment to be used with external fixator clamps
Profile	5mm Shaft - 40mm Thread & 50mm Thread
Material	SS 316L

#### Schanz Screws - Self Drilling

Size	S.S.
3.5 mm x 6"	162.356
4.5 mm x 8"	162.458



Intended Use	For Fixation of Fracture Fragment to be used with external fixator clamps
Profile	4mm Shaft Dia x 22mm thread, 5mm shaft dia x 40mm Thread
Material	SS 316L

#### Schanz Screws - Tapered Thread



Size	S.S.
5 mm x 6"	163.506
6 mm x 8"	163.608

Intended Use	For Fixation of Fracture Fragment to be used with external fixator clamps
Profile	5mm Shaft - 40mm thread, 6mm Shaft 50mm Thread
Material	SS 316L

Doc No	Issue No/Rev No	Dated	Page No
F/Ortho/ST/13	01/00	24-04-2019	Page 11 of 14

## Pins & Wires Surgical Technique

### INSTRUMENTS FOR WIRES / PINS

'K' Wire Bender / Plier



Reference  
650.001

Wire Twister  
Aesculap Type



Reference  
651.001

Wire Tightner with Two Pegs  
Rocket Type



Reference  
652.001

'K' Wire Bender / Cutter / Plier - 3 in 1



Reference	Size
453.001	Small
453.002	Big

Wire Passer - Fiber Handle



Reference	Size
653.001	Small
653.002	Medium
653.003	Big








'K' Wire Introducer



Reference	Size
445.001	For 1mm to 2mm

Doc No	Issue No/Rev No	Dated	Page No
F/Ortho/ST/13	01/00	24-04-2019	Page 12 of 14

## Pins & Wires Surgical Technique

<p>Multi Purpose Extractor/Plier with vise grip</p>  <p>Reference 654.001</p>	<p>'T' Handle with S. S. Chuck &amp; Key</p>  <p>0 - 6mm Capacity</p> <p>Reference 656.001</p>								
<p>Watson Jone's 'T' Handle</p>  <p>For 2.5mm Guide Wire</p> <p>Reference 655.001</p>	<p>S.S. Chuck &amp; Key Only</p>  <p>Reference 656.002</p>								
<p>'T' Handle for Schanz Screw</p>  <p>For 3.5mm &amp; 4.5mm</p> <p>Reference 657.001</p>	<p>Gigli Saw Handle in Pair</p>  <p>Reference 436.001</p>								
<p>Gigli Saw Wire</p>  <p>Reference 435.001</p>	<p>Gigli Saw Guide</p>  <p>Reference 437.001</p>								
<p>Gigli Saw Introducer</p>  <p>Reference 658.001</p>	<p>K. Wire Container - S.S.</p>  <table border="1"> <thead> <tr> <th>Reference</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>425.106</td> <td>6"</td> </tr> <tr> <td>425.109</td> <td>9"</td> </tr> <tr> <td>425.112</td> <td>12"</td> </tr> </tbody> </table>	Reference	Size	425.106	6"	425.109	9"	425.112	12"
Reference	Size								
425.106	6"								
425.109	9"								
425.112	12"								

Doc No	Issue No/Rev No	Dated	Page No
F/Ortho/ST/13	01/00	24-04-2019	Page 13 of 14



## Pins & Wires Surgical Technique

Instruments Certified :



**MFG. UNIT & REGD. OFFICE**

C-1-B/886/4, G.I.D.C. ESTATE

MAKARPURA,

VADODARA – 390 010 GUJ. INDIA

Tel: +91-89800 15555

+91-89800 25555

E-mail: [info@orthomaxindia.net](mailto:info@orthomaxindia.net)  
[admin@orthomaxindia.net](mailto:admin@orthomaxindia.net)

Doc No	Issue No/Rev No	Dated	Page No
F/Ortho/ST/13	01/00	24-04-2019	Page <b>14</b> of <b>14</b>