



INION OTPS™
Biodegradable Mini Plating System
Operation Technique



Inion OTPS™

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DESCRIPTION

The Inion OTPS™ Biodegradable Mini Plating System consists of biodegradable plates and screws of various sizes. The Inion OTPS™ implants are made of biodegradable copolymers composed from L-Lactide, D-Lactide and TMC monomers. These have long histories of safe medical use and degrade in-vivo by hydrolysis and are metabolised by the body into CO₂ and water. The Inion OTPS™ products gradually lose most of their strength within 18-36 weeks. Bioresorption takes place within two to four years.

INDICATIONS

The Inion OTPS™ Biodegradable Mini Plating System is intended for use in fixation of non-comminuted diaphyseal fractures of the metacarpal, proximal phalangeal, middle phalangeal and osteotomies in the presence of appropriate immobilisation.

The smaller diameter of screws and their respective plates are primarily for the phalangeal region whereas the largest screws and plates are intended for use for the metacarpal area.

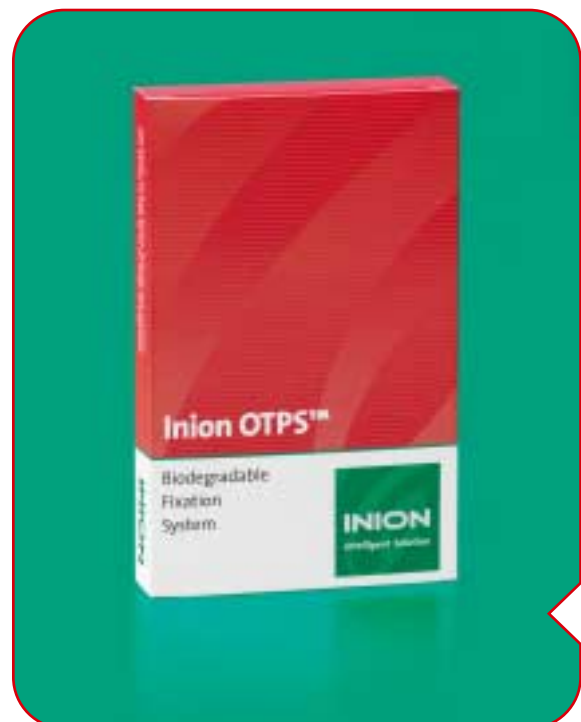
CONTRAINDICATIONS

These implants are not intended for use in and are contraindicated for:

- Spine indications.
- Load bearing indications unless used in conjunction with traditional rigid fixation.
- Situations where active or potential infection has to be respected.
- Patient conditions including limited blood supply, insufficient quantity or quality of bone; and where patient cooperation cannot be guaranteed (for example, alcoholism, drug abuse).

SURGICAL CONSIDERATIONS AND REMINDERS

- Prophylactic perioperative antibiotic treatment is recommended.
- Use proper local, regional or general anaesthesia.
- Maintain sterile field throughout the procedure.
- Proper exposure using standard surgical procedure.
- Thoroughly prepare the surgical site preserving the neurovascular structures by careful dissection.
- Good alignment/reduction of the fracture/osteotomy.
- Radiographs should be taken to check the alignment/reduction after fixation.
- Meticulous haemostasis and complete primary soft tissue closure over the implant are essential.



INION THERMO™ WATER BATH SET-UP

Place the water bath on a sterile draped cart so that it can be located close to the surgeon. The sterile Thermo-drape (ACC-9802T) will completely cover the bath. However the bath cannot be sterilised.

CAUTION: Do not switch on the water bath until there is water in the bath or the drape will melt !

TIP: By switching the unit on, but leaving it unplugged, you are saved from having to find the switch through the drape. (1)

Place the water bath inside sterile Inion Thermo-drape (ACC-9802T). Make a depression in the drape into which the sterile water can be poured. **(2)**

TIP: Flatten the bottom of the drape inside the bath to prevent airpockets under the drape.

Fill the bath to just over half-full (about 0.4 litres) with sterile water or saline. Once the water is in the bath it can be switched on. It takes about 30 minutes for the water to reach the required temperature of 55⁰ C or 131 F, so make sure to set it up at the beginning of the procedure. **(3)**

The 55⁰ C water bath is used instead of the 70⁰ C water bath (red label) which is used for the Inion OTPS™ Mesh System.

The plates need to be in the water bath 1 minute before use. **CAUTION: Do not warm screws in the water bath.** **CAUTION:** Take care not to perforate the drape with the surgical instruments.

PRECAUTIONS:

Before using Inion implants, study carefully the Instructions For Use booklet that is included in the Inion implant box.



OPERATION TECHNIQUE

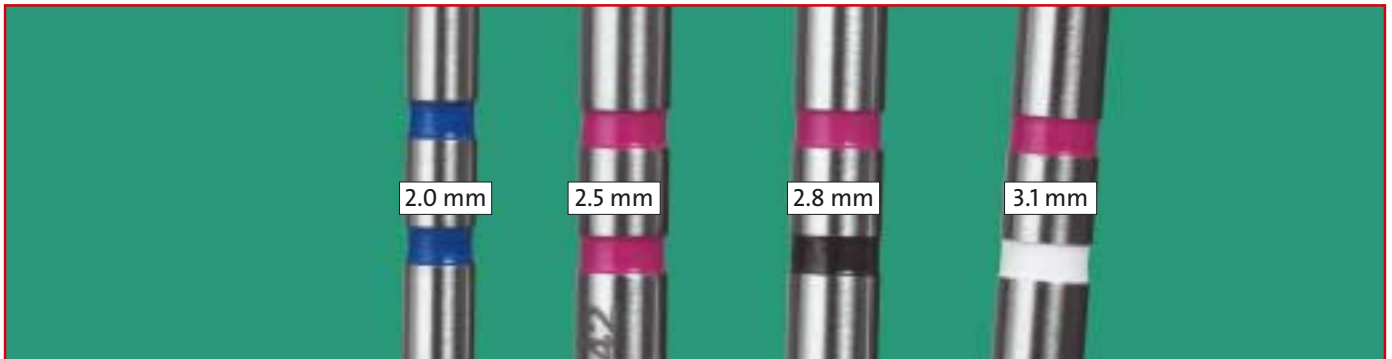
Contour the plate after the water bath treatment.

After water bath treatment the plates are most malleable for 10-15 seconds for easy adaptation. They can also be reheated for further contouring.



Plates can be cut easily with sterile surgical scissors.

TIP: Activate the plates in the Thermo water bath before cutting.



MANUAL TAP METHOD

Create a screw hole to the required depth using the appropriate drill bit attached to a slow speed drill (maximum 2,000 rpm) and irrigation.



Manually tap the hole in the bone.



Insert screw with screwdriver. Do not overtighten.



PLATE FIXATION

- (1) **Drill** bicortically through the plate hole using Inion drill bit and Inion drill guide.
- (2) **Remove the drill bit** and measure the depth of the drill hole.
- (3) **Tap the hole** using Inion Tap (mounted in Screwdriver Handle) corresponding to the screw diameter.

Flush the hole using sterile water or saline.

- (4A) **Insert the screw** using Inion screwdriver and handle.
- (4B) If the screwhead shears off during insertion:
 - 1) Drill through the screw remnants with the same size drill as previously used.
 - 2) Tap with the same size tap.
 - 3) Place another screw of the same size.
- (5) **Insert at least two screws on each side of the fracture/osteotomy line.**

If the bone quality is not sufficient for the selected screw diameter or drilling/tapping has made the hole too wide, use a larger diameter screw as an emergency screw. In this case, tap only through the plate.

Inion screws may be used as a lag screw if a larger diameter drill is used up to the fracture line.

	BICORTICAL	FRACTURE LINE
Ø screw	drill bit	drill bit
2.0	1.7 / 1.75	2.2 / 2.25
2.5	2.2 / 2.25	2.5
2.8	2.5	2.8



SCREW PICK-UP GUIDE

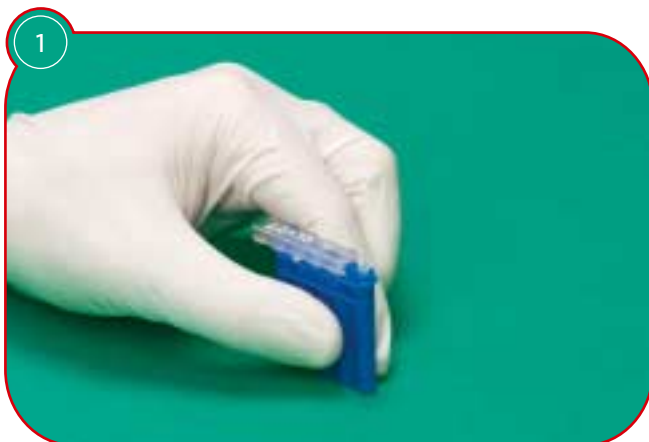
2.0 – 3.1 mm screws are applied using the universal crosshead screwdriver blade.

Inion OTPS™ Mini Plating System screws all have an X slot push-fit, which allows for secure pick-up.

PLEASE NOTE:

It is important that the screwdriver is aligned properly before pushing it into the screw head.

Insufficient pressure will not mount the screw securely.



STEP 1:

Take a firm grip of the dispenser box.



STEP 2:

Align the screwdriver gently with the screw head.

- 1) Turn the screwdriver gently, until you notice that the screw is rotating.
- 2) Push the screwdriver firmly into the screw.



STEP 3:

Rotate the screw slightly as you withdraw it to loosen it from the dispenser box.



Inion Screws are packed in a dispenser.

3.1 mm screws are single packed and other sizes are double packed.

TIP: If required, the screws can be cut to the desired length with standard surgical scissors or wire cutters.

UNIVERSAL INSTRUMENTS		
INS-9007	(T)	Universal screwdriver handle
INS-9024	(T)	Plate bending pliers
INS-9029	(T)	Universal screwdriver blade
INS-9040	(T)	Universal screwdriver blade, long
INS-9047	(T)	Counter sink 1.5/2.0 mm
INS-9048	(T)	Counter sink 2.5/2.8/3.1 mm
INS-9085	(T)	Counter sink 2.5/2.8/3.1 mm (AO-bayonet)
INS-9099	(T)	Drill guide 1.5/2.0 mm
INS-9088	(T)	Drill guide 2.5/2.8/3.1 mm
INS-9091	(T)	Depth gauge 2.0 mm- 3.1 mm
INS-9093	(T)	Screwdriver handle, cannulated
INS-9094	(T)	Screwdriver shaft, crosshead
ACC-9802	(T)	Inion Thermo drape (5 drapes)
ACC-9801	(T)	Inion Thermo water bath (230 V + EU plug)
ACC-9804	(T)	Inion Thermo water bath (110 V + US plug)
ACC-9809	(T)	Inion Thermo water bath (230 V + UK plug)
ACC-9813	(T)	Sterilisation tray for instruments
ACC-9818	(T)	Inion Compact Instrument Tray

2.0 mm INSTRUMENTS		
ART. NO.	DESCRIPTION	
INS-9055	(T)	1.75 mm drill bit with 22 mm stop (J-latch)
INS-9060	(T)	2.0 mm bone tap with 22 mm stop (manual)
INS-9104	(T)	1.7 mm drill bit with 22 mm stop (AO-bayonet)
INS-9105	(T)	2.0 mm bone tap with 22 mm stop (manual, AO-bayonet)

2.5 mm INSTRUMENTS		
ART. NO.	DESCRIPTION	
INS-9056	(T)	2.25 mm drill bit with 32 mm stop (J-latch)
INS-9061	(T)	2.5 mm bone tap with 32 mm stop (manual)
INS-9070	(T)	2.2 mm drill bit with 32 mm stop (AO-bayonet)
INS-9080	(T)	2.5 mm bone tap with 32 mm stop (manual, AO-bayonet)

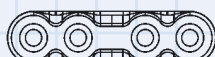
2.8 mm INSTRUMENTS		
ART. NO.	DESCRIPTION	
INS-9057	(T)	2.5 mm drill bit with 42 mm stop (J-latch)
INS-9062	(T)	2.8 mm bone tap with 42 mm stop (manual)
INS-9073	(T)	2.5 mm drill bit with 42 mm stop (AO-bayonet)
INS-9081	(T)	2.8 mm bone tap with 42 mm stop (manual, AO-bayonet)

3.1 mm INSTRUMENTS		
ART. NO.	DESCRIPTION	
INS-9058	(T)	2.8 mm drill bit with 42 mm stop (J-latch)
INS-9063	(T)	3.1 mm bone tap with 42 mm stop (manual)
INS-9076	(T)	2.8 mm drill bit with 42 mm stop (AO-bayonet)
INS-9082	(T)	3.1 mm bone tap with 42 mm stop (manual, AO-bayonet)

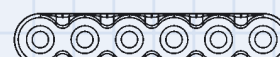
2.0 mm System



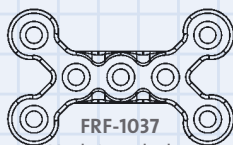
FRF-1013 | 4 hole plate



FRF-1014 | 4 hole plate, extended



FRF-1038 | 6 hole plate

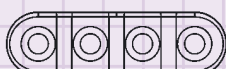


FRF-1037
X-plate, 7 holes

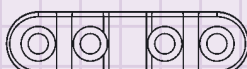


FRF-1016 | 10 hole plate

2.5 mm System



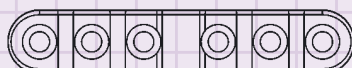
FRF-1023 | 4 hole plate



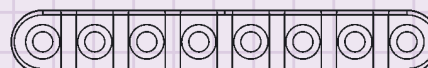
FRF-1024 | 4 hole plate, extended



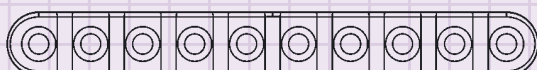
FRF-1025 | 6 hole plate



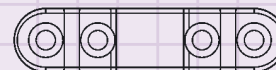
FRF-1026 | 6 hole plate, extended



FRF-1027 | 8 hole plate



FRF-1036 | 10 hole plate



FRF-1041 | 4 hole plate, extended long

SCREWS 2.0

PRODUCT	ART. NO.	
2.0 x 9 mm screw	FRF-1284	2 screws/box
2.0 x 11 mm screw	FRF-1285	2 screws/box
2.0 x 13 mm screw	FRF-1286	2 screws/box
2.0 x 15 mm screw	FRF-1287	2 screws/box
2.0 x 17 mm screw	FRF-1288	2 screws/box
2.0 x 20 mm screw	FRF-1289	2 screws/box



SCREWS 2.5

PRODUCT	ART. NO.	
2.5 x 10 mm screw	FRF-1248	2 screws/box
2.5 x 12 mm screw	FRF-1249	2 screws/box
2.5 x 14 mm screw	FRF-1250	2 screws/box
2.5 x 16 mm screw	FRF-1251	2 screws/box
2.5 x 18 mm screw	FRF-1252	2 screws/box
2.5 x 23 mm screw	FRF-1253	2 screws/box
2.5 x 30 mm screw	FRF-1254	2 screws/box



SCREWS 2.8

PRODUCT	ART. NO.	
2.8 x 10 mm screw	FRF-1257	2 screws/box
2.8 x 12 mm screw	FRF-1258	2 screws/box
2.8 x 14 mm screw	FRF-1259	2 screws/box
2.8 x 16 mm screw	FRF-1260	2 screws/box
2.8 x 18 mm screw	FRF-1261	2 screws/box
2.8 x 23 mm screw	FRF-1262	2 screws/box
2.8 x 40 mm screw	FRF-1263	2 screws/box



SCREWS 3.1

PRODUCT	ART. NO.	
3.1 x 10 mm screw	FRF-1266	1 screw/box
3.1 x 12 mm screw	FRF-1267	1 screw/box
3.1 x 14 mm screw	FRF-1268	1 screw/box
3.1 x 16 mm screw	FRF-1269	1 screw/box
3.1 x 18 mm screw	FRF-1270	1 screw/box
3.1 x 40 mm screw	FRF-1271	1 screw/box



Inion® is a registered trademark of Inion, Ltd.

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