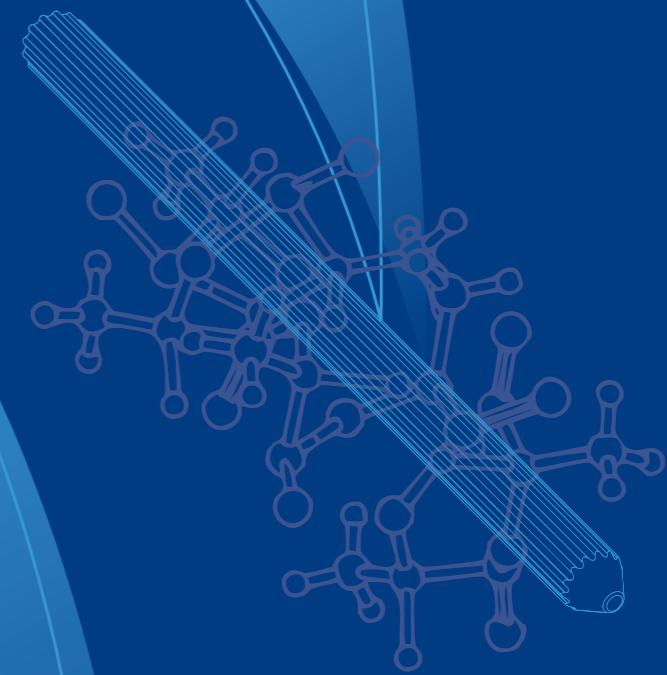


**GET BETTER**  
with ActivaPin™ you will



**Bioretec** products have their roots in research on biomaterials and implant technology started by the team led by Professor Pertti Törmälä at the Tampere University of Technology in 1977, first in the world.

So far, millions of patients have benefited of earlier innovations of our key people. **Bioretec's** products are developed under customer guidance to fulfill the highest demands of safety, user-friendliness and cost-efficiency.

**Bioretec** is devoted to supply solutions, which satisfy surgeon requirements and benefit patients. Financially feasible and responsible materials are the top priority and an essential part of the high-tech solutions we offer.

**Implants that do more – It's Bioretec**

[www.bioretec.com](http://www.bioretec.com)



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**Distributor**



B-L-APB1, Rev.0.0.

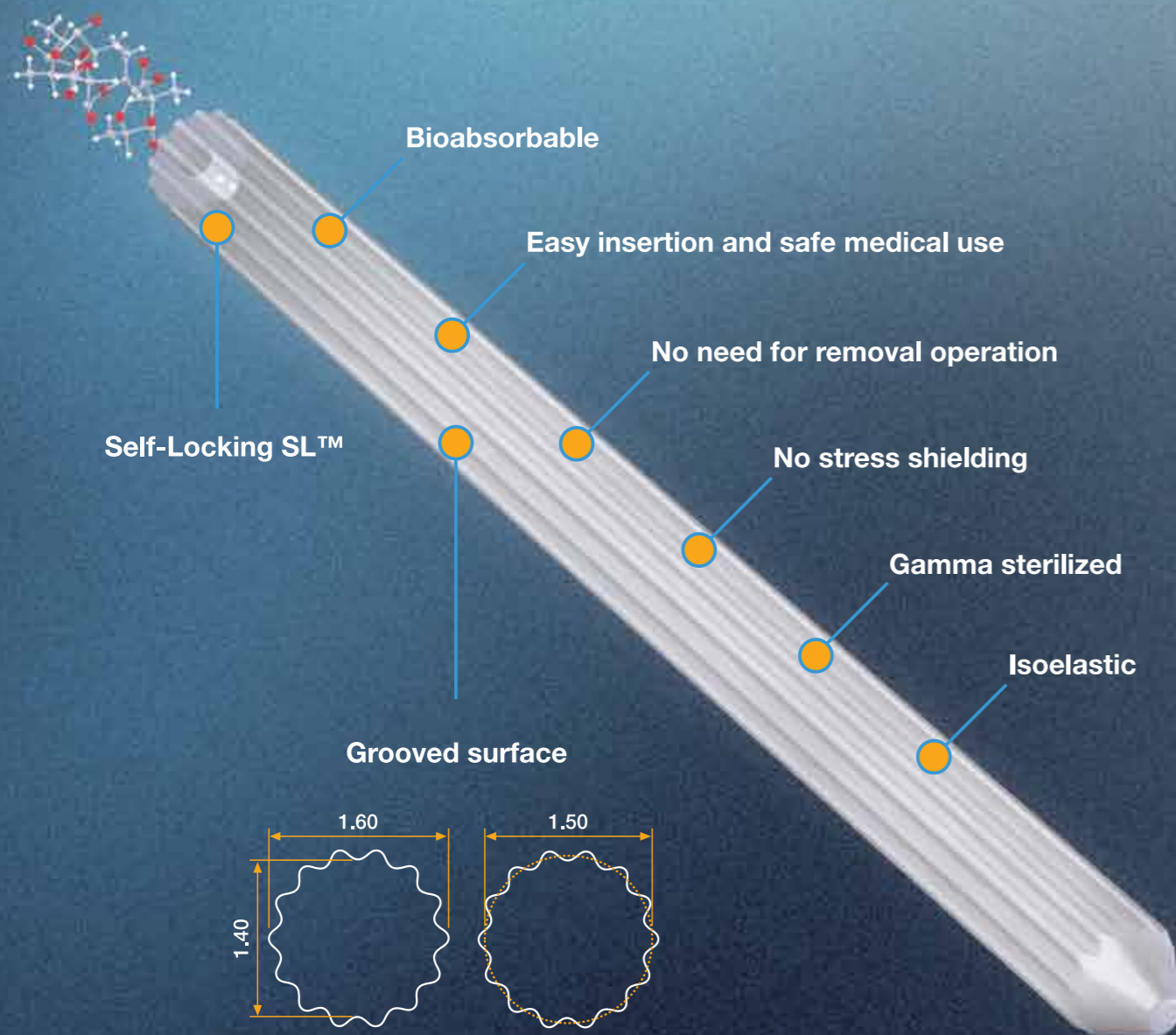
[www.bioretec.com](http://www.bioretec.com)

Properties and techniques of the ActivaPin™

**bioretec**

# GET BETTER with ActivaPin™

The new generation of bioabsorbable implants



**Figure 1:** Cross section of the ActivaPin™ 1.5 mm (left), indicating maximum and core diameter measurements. The illustration on the right demonstrates the relationship of the device to a 1.5 mm drill hole (right).

## What is ActivaPin™

The ActivaPin™ bioabsorbable pins are constructed of bioabsorbable lactic/glycolic acid copolymer (PLGA). These polymers have a long history of safe medical use and they degrade in vivo by hydrolysis into alpha-hydroxy acids that are metabolized by the body. The manufacturing process generates the high initial mechanical strength and stiffness of the pins. Properly used, in the presence of adequate immobilization, the ActivaPin™ maintains accurate alignment of small bone fractures, apical fragments and osteochondral fractures after surgical procedure. As the operated bone fracture or osteotomy gains strength during healing, the ActivaPin™ gradually loses its strength, however, maintaining its function at least 8 weeks. Bioabsorption takes place approximately within two years thus eliminating the need for implant removal surgery.

The ActivaPin™ is sterile, non-collagenous and non-pyrogenic. The material used in the manufacturing of ActivaPin™ has a history of safe medical use, and has been shown to be biocompatible in both animal and clinical evaluations.

The ActivaPin™ is available in different sizes, and designed to be used with customized instrumentation. Please refer to the valid product range from our website: [www.bioretec.com](http://www.bioretec.com).

ActivaPin™ is delivered inside the ActivaPin™ HOLDER. It is made to protect the pin during storage/delivery, and for easy and aseptic implantation of the pin.

## ActivaPin™ Offers

- **Self-Locking SL™**  
Instant self-locking effect is achieved with grooved surface design. For example, the maximum diameter for the 1.5 mm ActivaPin™ (measured from outer edge of the pin) is 1.6 mm, and inner diameter for the core is 1.4 mm. The cross section of the pin and its apposition to the recommended 1.5 mm drill hole is illustrated in Figure 1. The operating principle of this instant self-locking effect is related to the quality of the bone in the fixation area. In fixations with hard bone, the pin's grooved surface is compressed towards its core by the round shape of the bone drill hole. Alternatively, in fixations with soft bone, the pin retains its surface design, with the grooves extending into the bone approximately 0.1 mm.
- **Grooved surface design offers:**
  - The instant locking effect into the drill hole.
  - Better performance with inaccurate drill holes due to e.g. multiple reaming.
  - Improved rotation stability.
  - Channels along the implant provide space for potential vascularization, blood flow and interstitial fluid flow (ISF) required for effective bone healing.
- **Isoelasticity;** the bending modulus is closer to the value of cortical bone compared to metallic implants.
- **High Strength** properties offer easy insertion and safe medical use.
- **No stress shielding.**
- **No need for removal operation.**
- **Bioabsorption** eliminates risks of long term complications.
- **Implant is supplied Gamma sterilized – safe,** free of gas remnants, reduced cross infection risk.

## Surgical Technique

ActivaPin™

### STEPS 1-3

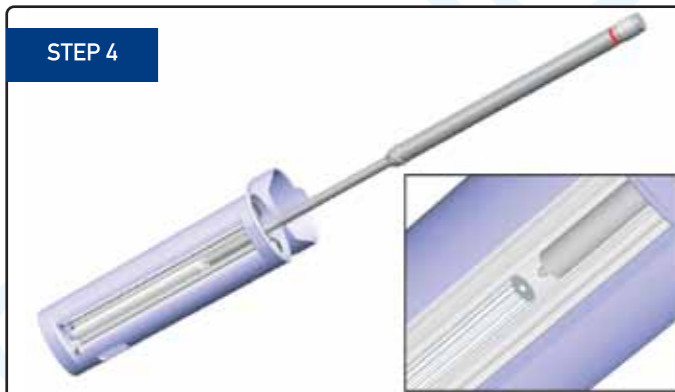


**Step 1:** Select the appropriate ActivaPin™ for the indication.

**Step 2:** Drill a hole which corresponds to the pin diameter through the fracture/osteotomy plane. To prevent overdrilling, multiple reaming with drill bit should be avoided.

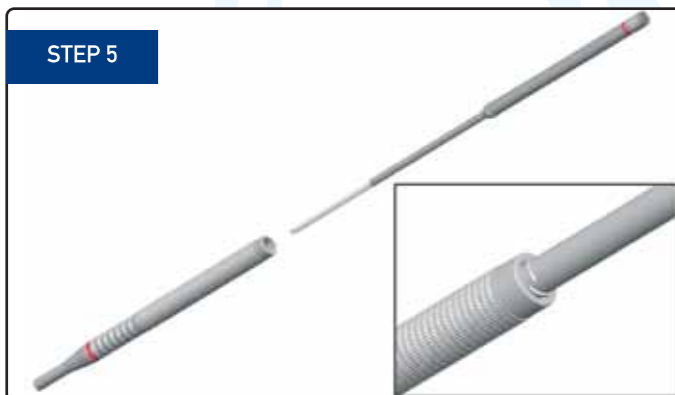
**Step 3:** Open ActivaPin™ HOLDER cap.

### STEP 4



**Step 4:** Pick the pin by pushing the ActivaPin™ APPLICATOR PISTON distal head into the ActivaPin™ HOLDER until it is attached to the pin.

### STEP 5



**Step 5:** Slide attached pin and piston inside the ActivaPin™ APPLICATOR SLEEVE through the twist lock by twisting the piston clockwise.

### STEP 6



**Step 6:** Introduce the pin into the hole by sliding the PISTON.

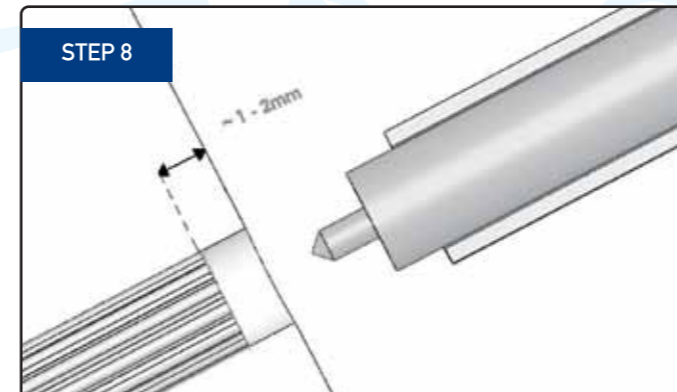
### STEP 7



**Step 7:** During insertion of the pin, hold the applicator and the pin parallel to the long axis of the drill hole so that it slides easily to the drill hole.

Insert the pin by lightly tapping the PISTON with a mallet.

### STEP 8



**Step 8:** Tap the PISTON until entire pin is forced fully into the drill hole. ActivaPin™ applicator is designed so that it sinks the pin 1-2 mm when piston is tapped to the end of the tube. This prevents the head of the pin protruding which could cause soft tissue irritation.

## Additional Information for Surgical Technique

**Step 9:** After insertion, if the pin is too long, scissors, reciprocating saw, or a hot wire can be used to cut the ActivaPin™. In such a case the pin must be pushed 1-2 mm below the cortical surface or smoothed at least to the cortical level, to avoid soft tissue irritation.

**Step 10:** Two or more pin fixations can be applied if necessary (depending on the nature and size of the fracture). In such case it is recommended that pins are inserted at divergent angles to one another rather than parallel, for best results.

**Step 11:** Based on surgeon's decision radiographs are taken before wound closure.

**Step 12:** After fixation, the wound is closed in layers applying standard principles of orthopaedics and traumatology.

**Step 13:** Meticulous hemostasis and complete primary skin closure over the implant are essential.

Please refer to package insert for indications, contraindications, precautions and warnings. This brochure is presented to demonstrate the surgical technique. Bioretec as the manufacturer of this device does not practice medicine and does not recommend this or any other system for use on a specific patient. The surgeon who performs any procedure is responsible for determining and utilizing the appropriate techniques for such procedure for use on a specific patient. Bioretec is not responsible for selection on the appropriate product or surgical technique to be utilized for an individual patient.

Continues >

## Product Range

## ActivaPin™

### REMARK

Prior to using Bioretec Implants examine thoroughly the Instructions For Use - inside each product package.

### ORDERING INFORMATION

For more information please contact your nearest distributor or our customer service at Sales@bioretec.com. Valid product range available from our website: [www.bioretec.com](http://www.bioretec.com).

#### ActivaPin™

Product Code	Description
B-AP-1520	1.5 mm x 20 mm
B-AP-1530	1.5 mm x 30 mm
B-AP-1540	1.5 mm x 40 mm
B-AP-1550	1.5 mm x 50 mm
B-AP-1560	1.5 mm x 60 mm
B-AP-1570	1.5 mm x 70 mm
B-AP-2020	2.0 mm x 20 mm
B-AP-2030	2.0 mm x 30 mm
B-AP-2040	2.0 mm x 40 mm
B-AP-2050	2.0 mm x 50 mm
B-AP-2060	2.0 mm x 60 mm
B-AP-2070	2.0 mm x 70 mm
B-AP-2730	2.7 mm x 30 mm
B-AP-2740	2.7 mm x 40 mm
B-AP-2750	2.7 mm x 50 mm
B-AP-2760	2.7 mm x 60 mm
B-AP-2770	2.7 mm x 70 mm
B-AP-3240	3.2 mm x 40 mm
B-AP-3250	3.2 mm x 50 mm
B-AP-3260	3.2 mm x 60 mm
B-AP-3270	3.2 mm x 70 mm

#### ActivaPin™ Instruments

Product Code	Description
B-IP-1500	Applicator for 1.5 mm ActivaPin™
B-IP-2000	Applicator for 2.0 mm ActivaPin™
B-IP-2700	Applicator for 2.7 mm ActivaPin™
B-IP-3200	Applicator for 3.2 mm ActivaPin™
B-IP-1503	Drill Bit Ø 1.5 mm (85 mm) with quick coupling
B-IP-2003	Drill Bit Ø 2.0 mm (100 mm) with quick coupling
B-IP-2703	Drill Bit Ø 2.7 mm (100 mm) with quick coupling
B-IS-4510	Drill Bit Ø 3.2 mm (120 mm) with quick coupling
B-IP-1501	K-wires (10 pcs) for 1.5 mm ActivaPin™
B-IP-2001	K-wires (10 pcs) for 2.0 mm ActivaPin™
B-IP-2701	K-wires (10 pcs) for 2.7 mm ActivaPin™
B-IP-3201	K-wires (10 pcs) for 3.2 mm ActivaPin™

#### Accessories

B-HTC-1000	High Temperature Cautery
B-IP-4003	Sterilization tray

ActivaPin™  
EPO Patent No. EP 1864616; EPO Patent No. EP 1902680;  
EP, US, FI Patent Pending

