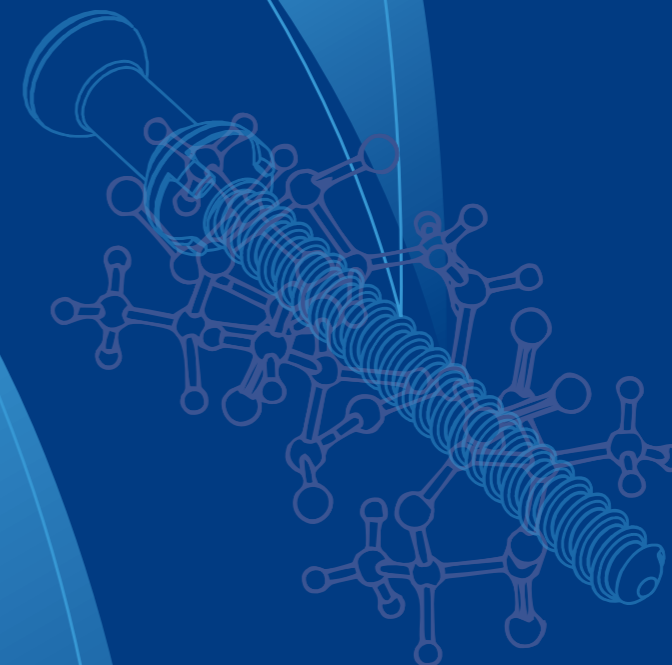


**GET BETTER**  
with ActivaScrew™ you will



**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-ASB1, Rev.0.0.

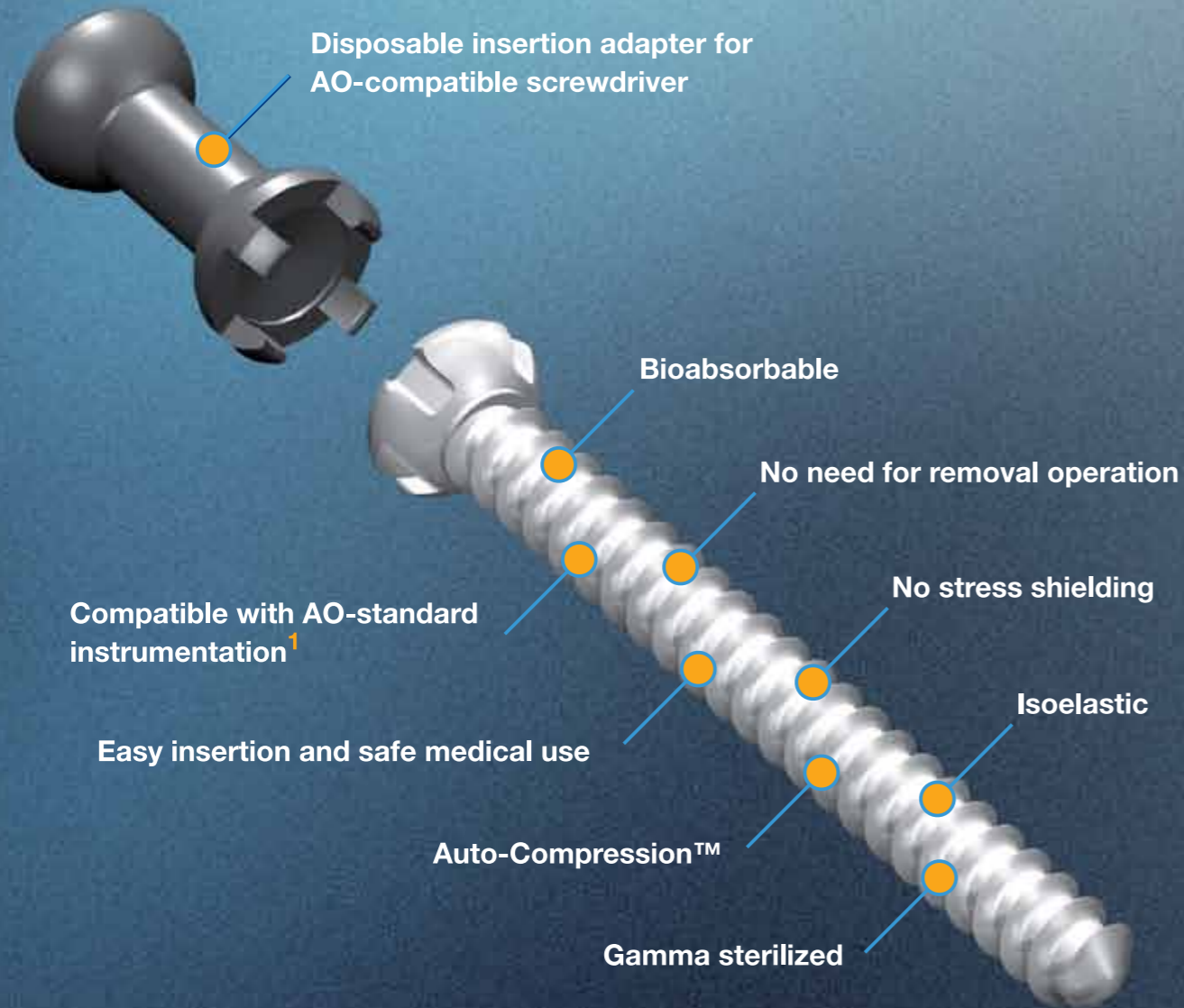
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Properties and techniques of the ActivaScrew™

**bioretec**

# GET BETTER with ActivaScrew™

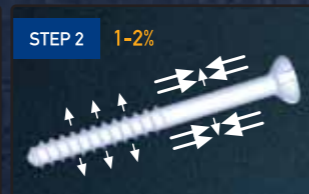
The new generation of bioabsorbable implants



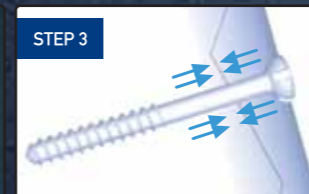
Auto-Compression™ technology with its patented mechanical activity:



Step 1: Initial compression can be created by using LAG screws or with fully threaded screws by overdrilling the proximal part of the drill channel.



Step 2: Auto-Compression™ effect is due to the dimensional changes in hydrolytic conditions within a few days after fixation. Diameter of the screw will increase and the length of the screw will decrease 1% - 2% compared to the initial dimensions.



Step 3: Bioretec's ActivaScrew™ is able to maintain compression at least 8 weeks thus reducing the risk of unstable fixation and allowing the bone to heal.

## What is ActivaScrew™

The ActivaScrew™ bioabsorbable screws 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 screws.

Properly used, in the presence of adequate immobilization, the ActivaScrew™ maintains accurate alignment of bone fractures, osteotomies, arthrodeses, bone grafts and osteochondral fractures of upper extremity, ankle and foot after surgical procedure. As the operated bone fracture or osteotomy gains strength during healing, the ActivaScrew™ 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 ActivaScrew™ is sterile, non-collagenous and non-pyrogenic.

The material used in the manufacturing of ActivaScrew™ has a history of safe medical use, and has been shown to be biocompatible in both animal and clinical evaluations.

The ActivaScrew™ is available in different sizes. Please refer to the valid product range from our website: [www.bioretec.com](http://www.bioretec.com).

The ActivaScrew™ is designed to be compatible with AO-instrumentation<sup>1</sup>.

**No customized instrumentation is needed.**

The ActivaScrew™ is delivered with the disposable metallic insertion adapter with AO/ASIF-compatible socket. Corresponding screw and instrument sizes are presented in a table form later in the brochure.

ActivaScrew™ is delivered inside the ActivaScrew™ holder. This is made for protection of the screw during storage/delivery, and for easy and aseptic implantation of the screw.

## ActivaScrew™ Offers

- An adequate range of fully threaded and partially threaded screws.
- High usability for a various indications mentioned above.
- Compatibility with AO-standard instrumentation,
  - standard AO-instrumentation,
  - no need for instrument investments.
  - AO-compatible disposable insertion adapter.
- Auto-Compression™, reduces the risk of unstable fixation.
- 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.
- Bioabsorbable implants transfer gradually stresses to the bone, thus reducing potential 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.

<sup>1</sup> AO/ASIF (Arbeitsgemeinschaft für Osteosynthesefragen/ Association for the Study of Internal Fixation) Standard ASTM F543.

## Surgical Technique

ActivaScrew™

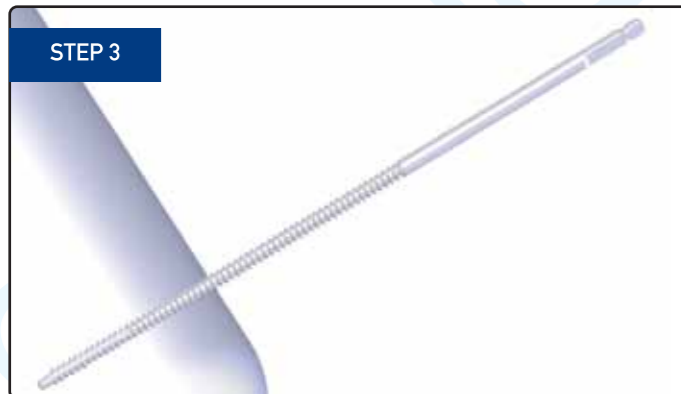
### STEPS 1-2



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

**Step 2:** Drill a screw channel through the fracture plane using appropriate drill bit. Use irrigation.

### STEP 3



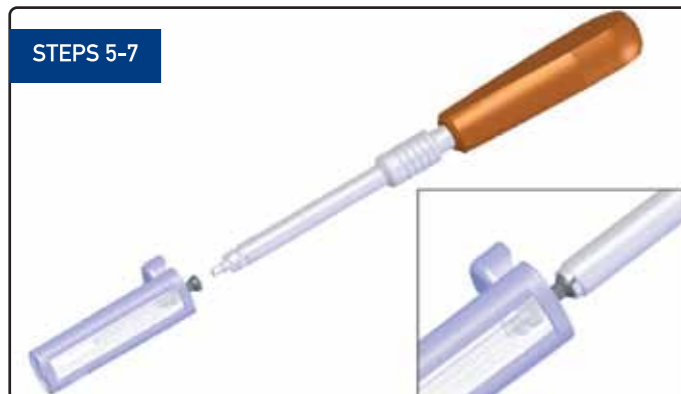
**Step 3:** Tap the screw hole manually to a sufficient depth using the appropriate AO-compatible bone tap (corresponding to the screw diameter) before screw insertion.

### STEP 4



**Step 4:** When the head of the fully threaded screw is needed as additional support, appropriate countersink can be used in order to make space for the screw head and to avoid soft tissue irritation by the protruding screw head.

### STEPS 5-7

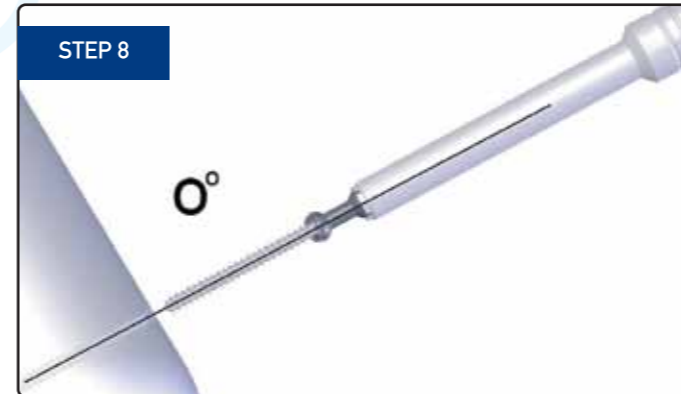


**Step 5:** The prepared hole should be irrigated prior to screw insertion to flush out bone debris.

**Step 6:** Open ActivaScrew™ HOLDER cap.

**Step 7:** Pick the screw out of the ActivaScrew™ HOLDER by appropriate AO-compatible screwdriver.

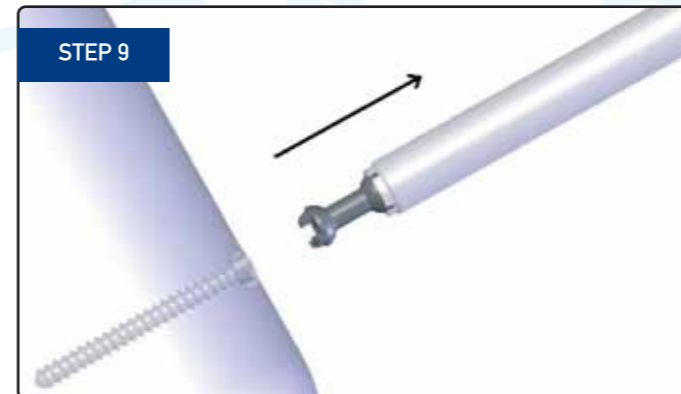
### STEP 8



**Step 8:** Hold the screwdriver and the screw parallel to the long axis of the drill hole and insert the screw fully into the drill hole.

**NOTE:** When the reduction is good and drilling and tapping are done properly, the insertion should be easy with two finger technique. In case the friction increases too much during insertion, screw must be removed and the hole must be rinsed and/or retapped.

### STEP 9



**Step 9:** After the screw is fully inserted, the INSERTION ADAPTER must be detached from the screw. After this the INSERTION ADAPTER is to be disposed.

## Additional Information for Surgical Technique

**Step 10:** After insertion in cases where the screw head is not needed (e.g. in the case of the syndesmosis screw), the screw is cut along the bone or plate surface after insertion to avoid soft tissue irritation by the protruding screw head. Scissors, reciprocating saw or a hot wire can be used to cut the ActivaScrew™. **DO NOT** cut the head of a LAG-screw.

**Step 11:** On the basis of 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. Bioretect 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. Bioretect is not responsible for selection on the appropriate product or surgical technique to be utilized for an individual patient.

Continues >

## Product Range

## ActivaScrew™

### 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).

#### ActivaScrew™, FULLY THREADED

Product code	Description
B-AS-2010	Screw 2.0 x 10 mm
B-AS-2012	Screw 2.0 x 12 mm
B-AS-2014	Screw 2.0 x 14 mm
B-AS-2016	Screw 2.0 x 16 mm
B-AS-2020	Screw 2.0 x 20 mm
B-AS-2710	Screw 2.7 x 10 mm
B-AS-2712	Screw 2.7 x 12 mm
B-AS-2714	Screw 2.7 x 14 mm
B-AS-2716	Screw 2.7 x 16 mm
B-AS-2718	Screw 2.7 x 18 mm
B-AS-2720	Screw 2.7 x 20 mm
B-AS-2724	Screw 2.7 x 24 mm
B-AS-3510	Screw 3.5 x 10 mm
B-AS-3514	Screw 3.5 x 14 mm
B-AS-3516	Screw 3.5 x 16 mm
B-AS-3518	Screw 3.5 x 18 mm
B-AS-3520	Screw 3.5 x 20 mm
B-AS-3524	Screw 3.5 x 24 mm
B-AS-3528	Screw 3.5 x 28 mm
B-AS-3532	Screw 3.5 x 32 mm
B-AS-3536	Screw 3.5 x 36 mm
B-AS-3540	Screw 3.5 x 40 mm
B-AS-4525	Screw 4.5 x 25 mm
B-AS-4530	Screw 4.5 x 30 mm
B-AS-4535	Screw 4.5 x 35 mm
B-AS-4540	Screw 4.5 x 40 mm
B-AS-4545	Screw 4.5 x 45 mm
B-AS-4550	Screw 4.5 x 50 mm
B-AS-4555	Screw 4.5 x 55 mm
B-AS-4560	Screw 4.5 x 60 mm
B-AS-4565	Screw 4.5 x 65 mm
B-AS-4570	Screw 4.5 x 70 mm
B-AS-4580	Screw 4.5 x 80 mm
B-AS-4590	Screw 4.5 x 90 mm

#### ActivaScrew™, PARTIALLY THREADED

Product code	Description
B-AL-3520	Screw [LAG] 3.5 x 20 mm, thread 8 mm
B-AL-3522	Screw [LAG] 3.5 x 22 mm, thread 9 mm
B-AL-3524	Screw [LAG] 3.5 x 24 mm, thread 10 mm
B-AL-3526	Screw [LAG] 3.5 x 26 mm, thread 12 mm
B-AL-3528	Screw [LAG] 3.5 x 28 mm, thread 12 mm
B-AL-3530	Screw [LAG] 3.5 x 30 mm, thread 14 mm
B-AL-3535	Screw [LAG] 3.5 x 35 mm, thread 14 mm
B-AL-3540	Screw [LAG] 3.5 x 40 mm, thread 14 mm
B-AL-3545	Screw [LAG] 3.5 x 45 mm, thread 15 mm
B-AL-4525	Screw [LAG] 4.5 x 25 mm, thread 12 mm
B-AL-4530	Screw [LAG] 4.5 x 30 mm, thread 15 mm
B-AL-4535	Screw [LAG] 4.5 x 35 mm, thread 18 mm
B-AL-4540	Screw [LAG] 4.5 x 40 mm, thread 20 mm
B-AL-4545	Screw [LAG] 4.5 x 45 mm, thread 22 mm
B-AL-4550	Screw [LAG] 4.5 x 50 mm, thread 24 mm
B-AL-4555	Screw [LAG] 4.5 x 55 mm, thread 26 mm
B-AL-4560	Screw [LAG] 4.5 x 60 mm, thread 28 mm
B-AL-4565	Screw [LAG] 4.5 x 65 mm, thread 30 mm
B-AL-4570	Screw [LAG] 4.5 x 70 mm, thread 32 mm
B-AL-4580	Screw [LAG] 4.5 x 80 mm, thread 40 mm
B-AL-4590	Screw [LAG] 4.5 x 90 mm, thread 46 mm

#### Instruments and Accessories

Product code	Description
B-ISS-1000	ActivaScrew Instrument Set
B-HTC-1000	High Temperature Cautery

ActivaScrew™  
EP, US, FI Patent Pending

