

External Fixation System™

Frequently asked questions

The Securos External Skeletal Fixation System was developed to simplify the application of fixators and reduce complications. It has been proven in published clinical trials to decrease surgical time, speed healing time, and dramatically reduce pin loosening (JAVMA vol. 212: 1267-1270, 1998).

What is so different about the Securos clamp, it looks just like an open type of KE clamp?

The Securos clamp can be snapped onto a connecting rod at any time without disassembling the construct. The KE construct would not allow placement of a new clamp between preexisting clamps without first disassembling the construct for a new sequencing of clamps. The Securos clamp works completely different from a KE clamp. A KE clamp ‘squeezes’ the connecting rod with resultant deformation when tightened’ making it difficult or impossible to reuse. The Securos clamp functions by drawing the head component into the U component, causing an interference between the head and connecting rod-- like a spot weld. This mechanism of action is more secure than the KE clamp (Vet Surg vol. 27: 224-230, 1998), and the U component does not deform while it acts like a lock washer keeping the clamp tight on the fixation pin throughout healing. This also makes it indefinitely reusable. The unique features of this clamp were awarded United States Patent # 5,976,133.

Can I use my old KE clamps, connecting rods, wrenches, etc?

YES! This was basic to the Securos design. Asking practitioners to discard their entire inventory and purchase a completely different system was considered irresponsible. Although different in design, Securos clamps may be used together with KE clamps in the same construct.

What is that aiming device and why do I need it?

The Securos Pin Placement (Aiming) Device was designed to provide greater ease and precision in the creation of external fixation constructs. Historically, pin loosening and associated decreasing construct rigidity as well as soft tissue trauma have been issues raised in objection to external fixation. Accurate pin placement using the Pin Placement Device addresses these concerns. Further, without use of the Pin Placement Device, likelihood that transfixation pins exiting the trans cortex of a Type II construct coming out in the same plane is remote unless an additional connecting rod with clamps ‘jig’ is created. The Securos Pin Placement Device negates the need for this jig to be constructed.

I’ve heard that full pins cause too many problems and should not be used, but the Securos system is a bilateral system.

The Securos system can be used in any of the described configurations including unilateral (type I), biplanar (type Ib), bilateral (type II), and three-dimensional (type III). Type I configurations can be used for most any fracture, while type II configurations are designed primarily for fractures below the elbow and below the knee. This is because of torso infringement with morbidity on the medial side of the construct. (Exceptions include vertebral and mandibular placement.)

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Using the augmentation bars in unilateral fixators appears to be an added step. Why do you have them?

Using the augmentation bars is a simple and effective way to increase unilateral stiffness with the standard size fixator. Adding an augmentation bar takes only minutes and costs very little. A presentation on this system received a prestigious award at the American College of Veterinary Surgeon's meeting in 1999. These bars can be easily removed without altering the 'foundation' construct; thereby, dynamizing the construct.

I heard that more stiffness is not always the best; that a fracture should be "dynamized?"

Excessively rigid fixation will cause delayed fracture healing, with little evidence of healing activity and minimal to no callus formation. Stabilization with stiff frame constructs with high levels of axial stiffness can slow bone healing. If early rigid and stiff stabilization is required, as with highly comminuted fractures, there is an opportunity for staged partial disassembly of the construct and decreased rigidity, or destabilization, of the frame to optimize bone healing as healing progresses. As a general rule, timing for destabilization is 4 to 6 weeks for young dogs, 6 weeks for adult dog, and 8 to 10 weeks for older dogs and cats. Historically surgeons would remove pins or disassemble parts of fixators under patient anesthesia to do this. With Securos unilateral configurations the augmentation bar (when used) is removed. With bilateral configurations, the bolts of distal clamps are replaced with special dynamization bolts. (Securos dynamization bolts have a four sided head rather than the six sided standard clamp bolt.) This increases axial loads on the fracture and still supports the fracture. One can dynamize the fracture as an office visit without sedation, anesthesia, removing pins, or going into the operating room.

What is special about the Securos external fixator pins?

The Securos external fixator pins are a vast improvement over previous pins in both human and veterinary medicine. Implementing advanced metallurgic techniques, Securos pins have far greater stiffness than others. Securos transfixation pins are made of a material which has greater stiffness than regular IM pins, although both are typically 316L stainless steel. The normal Steinmann pin has a modulus of about 140,000 pounds per square inch, whereas the Securos transfixation pins have a modulus of about 210,000. Further the Securos positive profile pins provide a buttress thread profile with a 2% press fit.

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