

Fusion Implants

Advanced Veterinary Devices



LEAP

Lateral Epicondylar Anatomical Plate

ENGLISH SPRINGER APPLICATION NOTES



Fusion LEAP was designed for use in English Springer Spaniels, but it has been successfully applied in multiple breeds.

Engineers at **Fusion Implants** analysed the shape of the humerus of over 70 English Springer Spaniels, and used over 60 of the CT scans to design the shape of the Fusion LEAP. We investigated the configuration of fractures, and optimised screw hole position and screw direction to maximise the opportunity of achieving good bone holding, and to minimise the risk of impairing joint function.

The Fusion LEAP is 3D-printed from medical-grade titanium alloy (Ti6Al4V).

The locking screw holes are pre-drilled and tapped in a milling machine, the plate is then anodised. It accepts 2.4mm and 2.7mm locking screws (these screw sizes have the same head design).

- LEAP accepts 2.4mm and 2.7mm titanium alloy, Fusion Implants locking screws.
Please note that the drill diameter for these screws (1.9mm and 2.1mm respectively) differs from some other screw manufacturers.
- LEAP is designed so that the proximal section sits on the caudo-lateral to lateral aspect of the distal part of the humeral diaphysis, and the distal part sits on the caudal to caudolateral part of the lateral epicondylar crest.
- The proximal screw-hole direction should steer the screws across the widest part of the bone in most cases.
- The distal screw-hole direction should steer the screws to exit on the cranio-axial (cranio-medial) surface, away from articulating surfaces. Check that distal screw tips will not interfere with the anconeal process when the elbow is in extension. If interference can not be avoided with plate adjustment, select screw length so that there is no protrusion from the trans-cortex.



- Please take time and care in assessing the best position for the LEAP and consider the direction of the screws.
- Please note that the decision to use the LEAP is at the surgeon's discretion.
- Screw-hole position has been selected that, across the two length-alternatives available, it should be possible to place at least two bicortical locking screws proximal to and distal to the fracture.
- Prioritise maximising screw number and purchase in the distal fragment. Distally, the screws are shorter and engage weaker bone, so it is more beneficial if three screws can be achieved. Proximally, the screws are longer and engage harder bone, so better bone holding is expected.
- Please note that the distal screw hole position and plate contouring is identical in both the short- and long versions of LEAP.
- Surgeon surveys suggest that empty screw holes over the fracture site are of minor concern only, as long as the fracture is considered "load-sharing".
- The screws can be placed in any order. Please note the projected position of all screws before drilling any holes.

