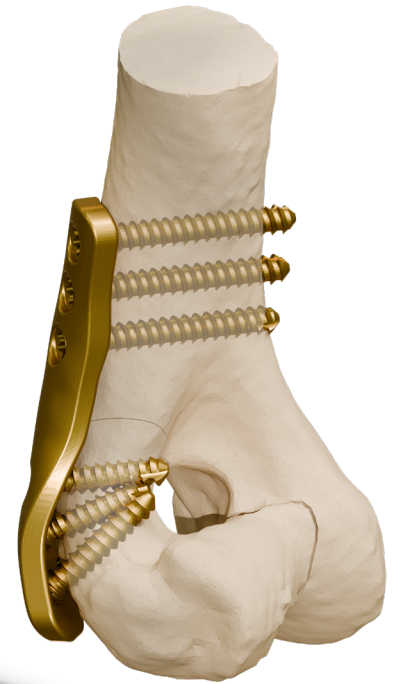


**Fusion
Implants**

Advanced Veterinary Devices



LEAP

LATERAL EPICONDYLAR
ANATOMIC PLATE - CANINE HUMERUS

SURGICAL PROTOCOL

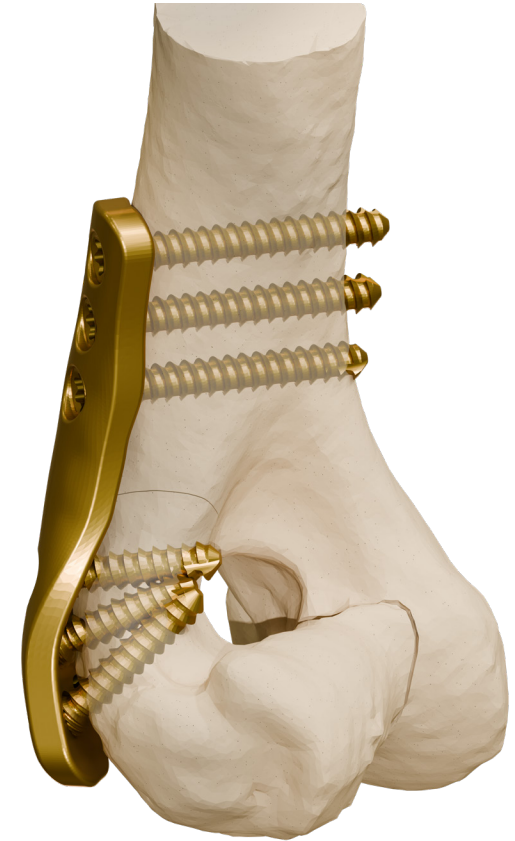
Implant Variants

- **French Bulldog (FBD) LEAP (for small breeds)**
 - Left and Right options available.
- **English Springer Spaniel (ESS) LEAP (for medium to large breeds)**
 - Short and Long versions (Left and Right).
 - **Distal end profile and screw distribution:** identical in both variants.
 - **Difference:** long plate provides extended bridging section, and a slightly more dispersed screw distribution proximally for fractures with more proximal lateral component.



Design and Specifications

- **Purpose:** The management of the lateral condylar fractures in dogs.
 - **Aims:**
 - Minimise or eradicate the need for intraoperative plate contouring
 - Reduce the need for soft tissue dissection as the plate sits in the natural facial plane proximally.
 - Maximise **working length of plate** on distal fragment.
 - Maximise screw-bone interface by optimising screw density and screw trajectory.
 - **Plate position:**
 - Sit LEAP **as distal as possible**.
 - Confirm distal end is level or slightly distal to the **transcondylar implant**.
 - The caudal edge of the plate approximately follows the **ridge at the caudal aspect of the lateral epicondyle**.
- Fit:** anatomic, but minor variation in seating expected between patients.
- **Screw compatibility:**
 - **2.4 mm locking screws:** use 1.9 mm drill bit, T8 screwdriver.
 - **2.7 mm locking screws:** use 2.1 mm drill bit, T8 screwdriver.
 - **Temporary fixation:** K-wire holes located:
 - Proximally between holes **1 & 2**.
 - Distally between holes **5 & 6**.



Screw Placement Strategy

It is recommended to place as many screws in each fragment as anatomy and fracture configuration allows, with a minimum of two locking screws in each fragment. Screws may be placed at the surgeon's discretion, but the following order is suggested:

Hole 3

- Place first.
- Before fully tightening, plate position can be finalised by rotating around this screw.

Hole 6

- Engages lateral condyle distal to radial fossa.
- **Risk:** screw tip exiting into radial fossa.
- **Technique:**
- Drill to predetermined depth: this could be estimated from CT or radiographic measurements, or based on clinical experience and the size of the dog.
- Alternatively, drill until exit and measure with depth gauge, then **subtract up to 2 mm** from measured length to ensure no screw tip exposure at joint surface.
- Avoid screw tip protruding into radial fossa.

Hole 4

- Care required at this site; may exit into olecranon fossa and impinge on anconeal process.
- **Technique:**
 - Flex elbow during drilling to disengage anconeal process from olecranon fossa.
 - Subtract **up to 2 mm** from depth-gauge measured tunnel length.
 - Bicortical drilling is advised, but a small area of cartilage damage on axial surface of the lateral epicondylar ridge is inevitable.
- **Safety check:**
 - After screw placement, take the joint through full flexion/extension.
 - Palpate for crepitus or catching.
 - Apply **internal rotation (supination)** to the antebrachium: this presses anconeal process laterally against axial surface of lateral epicondyle to test for impingement.

Hole 5

- Same precautions as Hole 4 (flex elbow, subtract up to 2 mm, confirm no impingement)

Holes 1 & 2

- Can be placed once distal fixation secured.
- Standard technique.
- At surgeon's discretion, screw 1 or screw 2 can be placed mono-cortical.

Intraoperative Safety Checks

- For the distal screws, always subtract **up to 2 mm** from screw tunnel measurement to reduce risk of intra-articular screw protrusion.
- After distal screw placement, perform a **range of motion test** for crepitation or restriction.
- Perform **internal rotation test** to confirm no contact between anconeal process and screw tips.

Plate contouring

- Plate contouring is very rarely required if the plate position is correct.
- Where contouring is required, place the distal end of the plate in the desired final position and observe the modifications required to bring the proximal part of the plate to the bone. This can usually be achieved with a single bend in the bridging, or proximal segment of the plate. This avoids modifying the more heavily pre-contoured distal section.

Summary

The **LEAP plate** provides reliable distal humeral fixation in dogs.

The distal contouring, screw density, and optimised screw trajectories allow or excellent bone purchase. The lateral position of the proximal section (relative to a straight plate contoured to sit caudally) allows for less soft tissue dissection and retraction. Correct plate positioning, careful screw length measurement, and intraoperative motion testing are essential to mitigate the risk of screw impingement and ensure optimised working length.

