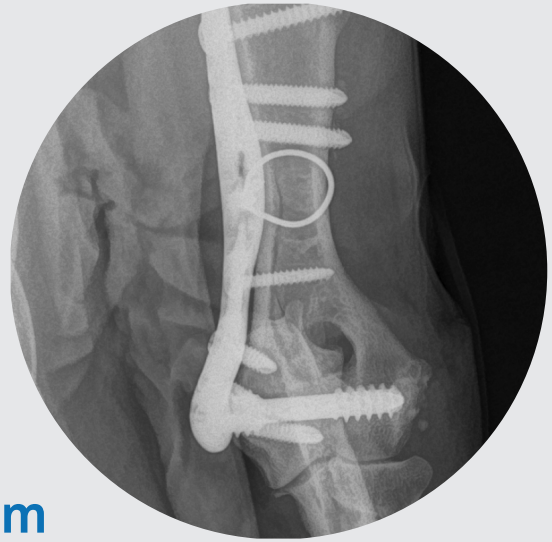
Fusion Implants

Advanced Veterinary Devices

HISS

Humeral Intracondyler Stabilization System



APPLICATION NOTES

The HISS is for the treatment of Humeral Intracondylar Fissures (HIF) or associated fractures in dogs.

HISS Designed for strength

- The HISS System comes in two size variants: Small and Large.
- The core diameter for the HISS Small it is 2.9mm, for the HISS Large it is 4mm.
- HISS Small was designed using biometric data for French Bulldogs, but it is suitable for dogs of that size or puppies.
- HISS Large is based on biometric data for the English Springer Spaniel but is suitable for dogs of that size bracket.
- Each screw has an individual drill bit. The drill preparation for the HISS does not allow for void preparation, as seen in the Humeral Intercondylar Repair System (HIRS), for debridement or grafting; HISS is primarily aiming for strength and stabilisation.

HISS Screw Selection

In the HISS Small you have 4 options going up in 2 mm increments from 24-30mm.

In the HISS Large you have 5 options going up in 2 mm increments from 28-36mm.

Choose an implant that matches the tunnel length. Only going at 'size up' if the length of the tunnel is an interim measurement between two different screws; these are headless screws, no need to add length for the head. The screw only needs to extend out of the trans-cortex far enough for us to be able to find the tip - we do not need to grip the tip of the screw. NB: If you need to retrieve a HISS Screw due to breakage Fusion Implants have a retrieval device which locks on to the end of the screw that engages the 3D cutting tips.

Drill Bit

This is a stepped drill bit with three parts:

1) A 8mm long 1.9mm nub, this nub helps guide us through our 2mm pilot hole.
2) A 4mm fluted section, this drills the threadhole for the transthread and tunnel for the smooth central shaft.

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3) Finally, we have a 5.9mm fluted section for the cisthread (head).

These are LARGE drill bits, and if you are going to start using the HISS, it is important to check that the orthopaedic drill will accommodate the drill bit!

The topography of the medial humerus is challenging, there is often a dramatic slope from the most prominent point of the epicondyle cranially, the length of the hole is going to be different caudally than cranially. Advice is to drill so that the laser mark reaches the point halfway between the cranial and caudal limits of the hole.

Bone Quality

In HIF, the bone is often very sclerotic. To avoid bone necrosis it is advisable that we drill in 'bursts' a few mm at a time, allowing time to cool, and lavage the tunnel, removing the swarf. Take your time; you're dealing with dense, sclerotic bone so it can take a fair bit of effort to drive the screw through.

Implant Application

The implant is self tapping. Once engaged after a few decent turns, it is advisable to do a quarter turn back to keep cutting flutes clear. Compression occurs at fracture or fissure because of a difference in 'pitch' between the cisthread and transthread.

As soon as cisthread engages bone, controlled compression begins. The implant is self tapping. Once engaged after a few decent turns, it is advisable to do a quarter turn back to keep cutting flutes clear. When driving the implant to the most prominent point of the medial epicondyle, once the fissure or fracture is compressed, you cannot drive the implant any further. Although it may sit deeply, in some cases the implant may bottom out when there are still a few threads visible at the cranial margin.

Checking the cranial threads are engaged

If the implant bottoms out before the cranial threads are engaged it is advisable to remove the implant completely, and to reduce the height of the most prominent point of the medial epicondyle using rongeurs by about a thread (approx 2mm). Ultimately, the implant once reapplied will be seated deeper in the bone and the cranial threads are closer to the cranial limit of the hole before the caudal threads engage the medial epicondyle. Thus, compression of the fissure starts later in terms of depth of engagement of the implant - the implant will bottom a few mm later, resulting in less threads prominent cranially, and a deeper seated implant , and engaged on both sides of the fissure.