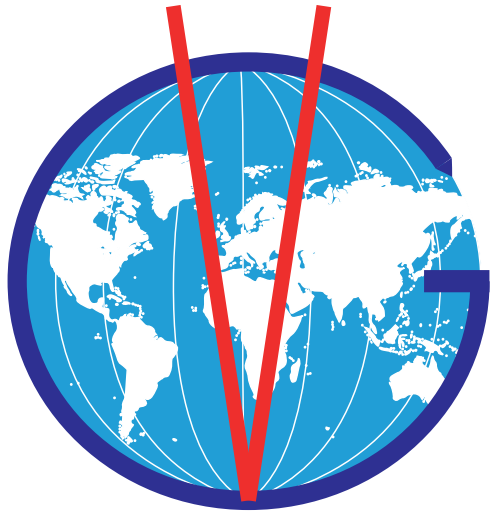


# VETLIG GLOBAL



*The free fibers for the respect of biology*

## GENERAL CATALOGUE

VETLIG GLOBAL is a commercial trade mark of STIF SAS.

It's dedicated to orthopaedic veterinary surgery and particularly to the reconstruction of ligaments, tendons, muscles and other soft tissues.

*Dr J.P. LABOUREAU*

## **BACKGROUND**

In the 1980s the initial enthusiasm for the reconstruction of ligament injuries using synthetic ligaments collapsed due to the rate of failures.

However, some clinicians and researchers, considering the interest of this technique and how it could be reliable, they tried to understand the reasons of these failures.

It first appeared that the fibres used were not the right ones in terms of mechanical properties. They must have a minimum of elasticity, resist of the movements of flexion and torsion (by what aberration could carbon ligaments have been tried?).

Many of these fibres were toxic for the fibroblasts and eliminated them within 24 hours in in vitro cultures. Some of them were still coated with lubricants, and it was necessary to learn how to eliminate it because they caused local and even severe general intolerance reactions. It was therefore primordial to select fibres that had the required mechanical and biological qualities.

It also appeared that the architecture of the proposed ligaments did not correspond to the in vivo stresses to which they would be subjected: a combination of flexion, torsion and tension. The initial ligaments were woven, knitted or braided and had intersecting fibers in the active intra-articular area. The torsion and bending movements caused the fibres to shear apart from each other, producing debris, synovitis and finally rupture.

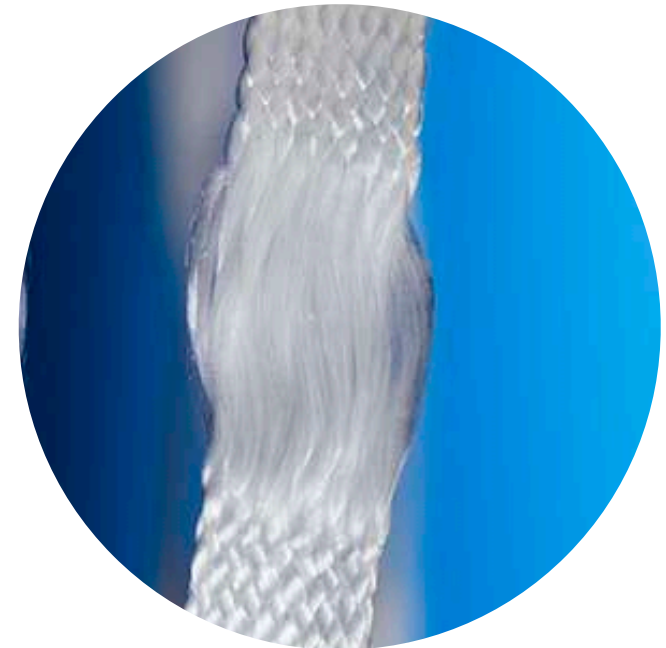
This gave rise to the concept of intra-articular "free fibers", an active zone only made of longitudinal fibers. Simulator tests combining tension, flexion and torsion over millions of cycles proved that the residual resistance with this structure was significantly increased.

Another, but not the least point was that the placement of these implants was approximate. It is obvious that no synthetic fiber has the properties of living fibroblastic tissue and in particular its elasticity. It is therefore imperative to respect the isometry in order not to exceed the capacities of synthetic fibers. To this end it was necessary to specify and define the insertion points and study the means of fixing.

Thus all these technical, biological and anatomical aspects had to be explored and the problems solved one by one.

For 25 years this new generation of synthetic ligaments has been widely used in humans with excellent results, comparable to autogenous plasties, while avoiding damage due to sampling and allowing a much quicker resumption of full support, mobilisation and normal activity, including sports. In view of these results in humans, it seemed interesting to adapt these techniques to veterinary surgery.

Since 2010 STIF - Vetlig Global has set itself this goal and, after 7 years of research and clinical trials in several countries, is ready to bring this progress for the benefit of animals, their owners and veterinary surgeons with the ZLIG.



**IN FEW WORDS**

More than 25 years of experience in human being with thousands of patients operated all around the world.

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7 years of research and clinical trials on animals (more than 200 dogs operated and monitored in different countries).

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Development of a product 100% adapted to dogs in case of ligament or tendon rupture.

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A very innovative and interesting technique for surgeons, opening the door to arthroscopy.

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A quick and lasting recovery for the animal.

-

A feeling of security for the animals (immediate support). An easy and secure post-operative period for the owners.

**α-ZLIG**



STIF - VETLIG GLOBAL bring new and innovative products into the veterinary market.

The rupture of the cranial cruciate ligament is one of the most frequent pathologies in dogs.

The usual techniques like extra capsular reinforcements are known to give quite good results in very small pets for a while.

The main classical techniques like TPLO or TTA give also some good functional results but are quite invasive and create an irreversible situation in changing the biomechanics of the joint. In case of complications (11% to 17% according to publications) it's sometimes difficult to find a solution.

Using synthetic ligaments which are currently perfectly biocompatible and reliable in terms of resistance, is a good option. It's a non invasive technique which can be performed under arthroscopy. It requires only two small tunnels in the bone which do not « burn the bridges » and do not create any irreversible change.

It really treats the problem where the problem is : reconstruction of the torn ligament itself to reproduce the function of the CrCL and recover the native mechanism of stability of the joint. The big advantage is the immediate solidity which allows the animal to do what he feels like, with no restriction and no risk as soon as the skin is healed. No need to wait for any consolidation of the bone like in osteotomies, therefore no worries for the owner and for the surgeon.

With the same philosophy of immediate solidity Vetlig Global supplies implants and procedures for other pathologies : tendons repair (Achilles, patellar, quadriceps...) hip dislocation, hernia, muscle ruptures and any situation where soft tissue repairs need to be reinforced.

These products are currently for dogs and cats but the same technology could be applied for other animals like horses.

Vetlig believes that these products will help veterinarians to offer their patients options which were not available before and enable them to go back to normal activities with minimal inconvenience.

## **IMPLANTS: CRANIAL CRUCIATE LIGAMENT**

Vetlig Global offers a complete range of ligaments with different strengths as well as several lengths of free intra-articular fibres to match the different weights and sizes of animals.

Each implant is taken out of the sterile box with a sleeve that protects it from any contact and allows the perfectly clean implant to be handled until it passes through the joint.

Different implants are available depending on the size and weight of the animal :

- 5 - 8 kg : 16 fibers - free fibers 10 mm – strength approx 2000 N



- 8 - 12 kg : 24 fibers - free fibers 15 mm – strength approx 3000 N



- 12 kg - 25 kg : 32 fibers – free fibers 17 mm – strength approx 4000 N

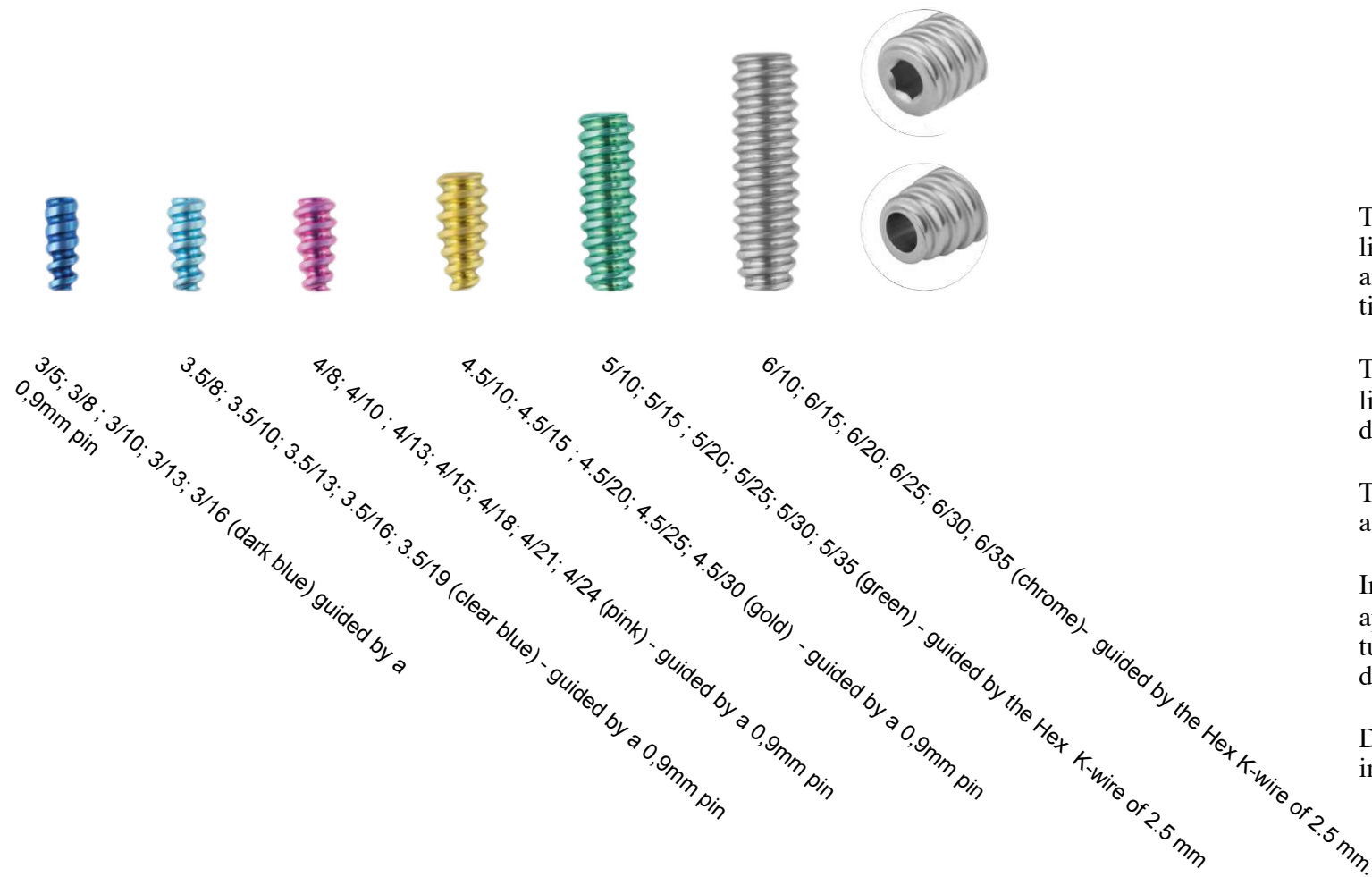


- 25 kg : 48 fibres – free fibers 19/22/25 mm – strength approx 6000 N



For large, very active dogs weighing more than 70 kg, it is possible to combine two implants. The length of the free fibres is determined « per-operatively » according to the length of the native ligament.

*STIF team is flexible and responsive. If you are looking for a specific type of implant or if you have any suggestions, do not hesitate to contact us.*



## CANNULATED SCREWS

The braided extra-articular parts of the ligaments are anchored in the femoral and tibial bone tunnels with cannulated titanium interference screws.

The screw must be guided parallel to the ligament by a guide pin to avoid any divergence.

The threads of the screws are round so as not to damage the fibres.

In general, the screw diameter should be approximately 1 mm larger than the tunnel diameter (depending on the bone density).

Different sizes are available: (Diameter in mm / Length in mm)

## SCREWDRIVERS

A single screwdriver handle allows the use of 3 interchangeable tips according to the screw's need :

- A specific hexagonal screwdriver tip cannulated at 1 mm to insert screws from 3mm to 4.0mm in diameter (guided by the 0.9 mm pin).



- A specific 1mm cannulated hexagonal screwdriver tip to insert 4.5mm screws (guided by the 0.9mm pin).

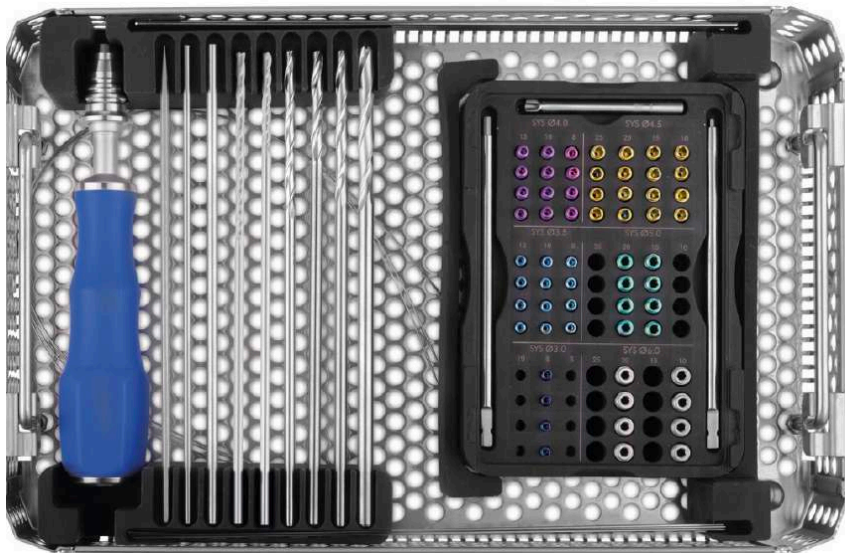


- A specific cannulated female screwdriver tip, suitable for the hexagonal pin, used for 5mm to 6mm screws.



## INSTRUMENTS SET

To facilitate the surgery, STIF - Vetlig Global has developed a set of instruments allowing a simple surgery. It contains:



- 4 cannulated drills of 2.5 mm, 3 mm, 3.6 mm, 4.2 mm.
- 3 non-cannulated drills of 3 mm; 4 mm and 4.5 mm for transverse tunnels where the drill does not need to be guided.
- Two 2 mm sharp K-wires used as guides for cannulated drills.
- Two 0.9 mm sharp K-wires used as guides for the 2.5 mm and 3 mm cannulated drill.
- Two 2 mm round K-wires.
- Two 0.9 mm round K-wires used as guides for 3 mm, 3.5 mm, 4 mm and 4.5 mm screws.
- 2 hexagonal 2.5 mm pins used as guides and as screwdrivers, for 5 mm and 6 mm screws.
- 1 set of 3 telescopic tubes of 6 mm, 8 mm and 10 mm as protective sleeves to protect the soft tissue during drilling, when required.
- 2 passage tubes, 2.5 mm x 180 mm and 3.5 mm x 180 mm to allow the passage of stainless steel loops.
- 4 stainless steel wire loops to pull the ligament traction wires through the tunnels.
- A silicone screwdriver handle to insert the three types of tips specific to cannulated screws.
- A specific hexagonal male screwdriver tip, cannulated at 1 mm for 3 mm; 3.5 mm and 4 mm screws (guided by the 0.9 mm pin).
- A specific male hexagonal screwdriver tip, cannulated at 1 mm for 4.5 mm screws (guided by a 0.9 mm pin).
- A specific cannulated female screwdriver tip, cannulated to the hexagonal pin, used for 5 mm and 6 mm screws.



## MULTIFUNCTION CANNULATED DRILL

The placement of guide pins for the drilling of femoral and tibial tunnels requires great precision.

This precision is impossible to achieve if the 20 cm long pins are placed in an ordinary chuck because the operator's hand is too far from the target and the flexibility of the pin does not allow it to be guided effectively.

It is therefore necessary to have a cannulated drill and chuck, which allows the spindle to protrude only a few centimeters to achieve the required accuracy.

Vetlig Global offers a cordless electric motor with rechargeable battery suitable for orthopaedic surgery, and in particular for the recommended operating technique (VIART\* technique).





## OTHER USES : TENDONS

Vetlig Global also offers synthetic implants to reinforce the repair of ruptured tendons, with the same philosophy of rapid recovery as for the cranial cruciate ligament.

One of the most frequent cases is for the Achilles tendon, but the implant is also suitable for the patellar tendon, quadriceps tendon, etc.



The flat part (right) is inserted into the proximal part "in a sandwich" and then sutured.

Depending on the length of the proximal tendon, it is possible to cut the synthetic implant above the blue lines which are there to prevent fraying of the braided fibres.

The free fibres are positioned at the rupture zone.

The distal part is inserted into a calcaneal bone tunnel and fixed with an interference screw.

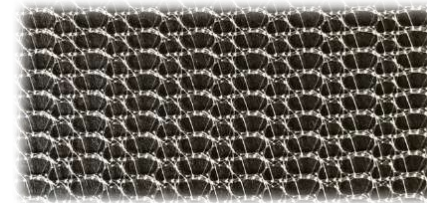
## REINFORCEMENT PATCHES

It is sometimes useful to strengthen the repair of various soft tissues such as hernia, muscles, rotator cuff and in many other situations where it is difficult to make a repair strong enough to withstand the dog's activity.

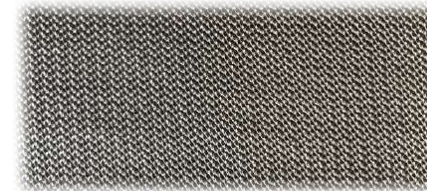
There are 3 types of patches, in 15 cm X 10 cm sheets which can be cut to the desired size. These patches are extremely porous and quickly invaded by the fibroblastic tissue.

They are preferably fixed with non-absorbable sutures.

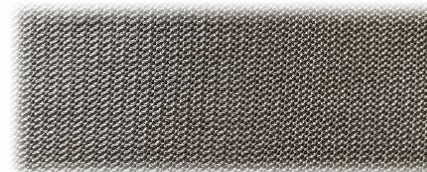
BIGPORE



STANDARD



SOFT



\* Pictures are not contractual

\* Vetlig Global keeps the right to modify the products offered



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