

C-CLOX®

Makes the lame walk again.



Special Thanks to Dr. John Innes



R **RITA**
LEIBINGER
MEDICAL

Cervical Intervertebral Fusion Implant

in cooperation with

Prof. Dr. Franck Forterre, University Bern (Switzerland)

C-LOX has been developed by RITA LEIBINGER in cooperation with Professor Dr. Franck Forterre, Bern University (Switzerland).

For more details please visit:

spinal.leibinger.vet



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Surgical Protocol

Surgical application of a new anchored intervertebral spacer (C-LOX, Rita Leibinger GmbH & Co. KG, Mühlheim/Donau, Germany) for the treatment of Canine Cervical Spondylomyelopathy (Wobbler Syndrome)

Authors: Dr. Günter Schwarz & Prof. Dr. Franck Forterre

Note: Preoperative radiographs are used to make preliminary selection of spacer and screw sizes. It is advisable but not indispensable to use fluoroscopy while performing the distraction-fusion technique with the C-Lox Cage. Fluoroscopy will provide accurate intraoperative assessment of correct implant and screw size, and of the depth and location of spacer and screw placement.

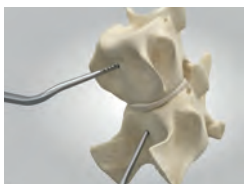


Place the dog in dorsal recumbency with a fulcrum underneath to support the neck. Avoid overextension. A standard approach to the ventral cervical spine is performed.

The affected disc space is identified and exposed, and a window is cut out of the ventral annulus fibrosus using a beaver blade. The width of this window should be minimally larger than the width of the selected spacer. The vertebral endplates delimit the cranial and caudal borders of the opening. Care must be taken not to penetrate the dorsal part of the annulus during discectomy.



In order to attach the C-LOX Distractor, vertically oriented 2,5 mm holes are drilled into each of the adjacent vertebrae. These holes must be exactly on the midline and should be located in the caudal half of the cranial and in the cranial half of the caudal vertebrae. Penetration depth should at least be 2/3 of the vertebral body depth in order to avoid tilting when distracting the vertebrae. The crista ventralis marks the median plane of the vertebrae but makes it easy to slide off the midline. Preoperative measurements and fluoroscopy will aid in taking care not to enter the spinal canal.



Insert the C-LOX Distractor into the predrilled holes and open its jaws to widen the intervertebral disc space.

The C-LOX Spinal Disc Broaching Curette is used to carefully remove all remnants of the nucleus pulposus. The dorsal part of the annulus fibrosus can be felt as a more dense structure and should be preserved. The exposed end plates are freed from as much connective tissue as possible, but subchondral bone must be fully preserved.



If a considerable amount of nucleus pulposus material is located within the spinal canal, this can be attempted to remove with the help of fine curettes or delicate arthroscopic biopsy forceps.

The suitable size for the C-Lox implant can be estimated pre-operatively on diagnostic imaging. Attach the C-LOX Implantation Placement Rod to the suitable



C-LOX Template and insert it in the intervertebral disc space. Ensure the correct fit. Here again, vertical beam fluoroscopy can be very helpful. If insertion requires energetic forcing or seems to achieve only slight distraction, a thinner or thicker template should be used.



After establishing optimal fit, the Template is replaced by the corresponding C-LOX Cage. Spikes on the cranial and caudal side will ensure a secure seating of the implant, but can make insertion slightly more difficult compared to the C-Lox

Template of the same size. Press the cage firmly down into place.



After proper seating of the C-Lox Cage, the C-Lox Distractor can be removed and the Implantation Placement Rod is removed from the cage. The cage will be secured with locking screws.



Select the drill guide according to the screw Length intended to use. Attach the Drill Guide to the Implant and use the dedicated 2.0mm drill bit to drill the hole for the Locking Cortical Screw. This drill bit forms a unit with the Drill Guide

and will create the hole in the vertebral body to guide the self tapping screw. Screw Lengths are selected pre-operatively from measurements on the preoperative radiographs in precise latero-lateral projection. The four Locking Cortical Screw are inserted using the Star-Drive C-Lox Screwdriver. The screws must be well anchored within the vertebral body and must not penetrate the vertebral end plates or the spinal canal. Again, fluoroscopy can be very helpful in achieving optimal screw placement.



Cancellous bone or bone substitutes can be apposed to the ventral surface of the treated disc space.

Close the soft tissues in a routine manner.



C-LOX Cages

C-LOX®



14 x 4 x 8 mm

14 x 6 x 8 mm

16 x 4 x 8 mm

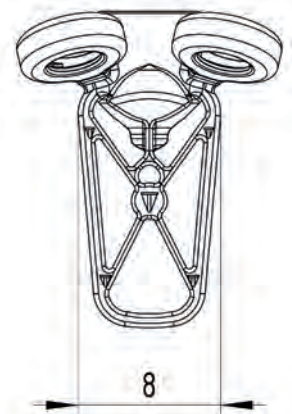
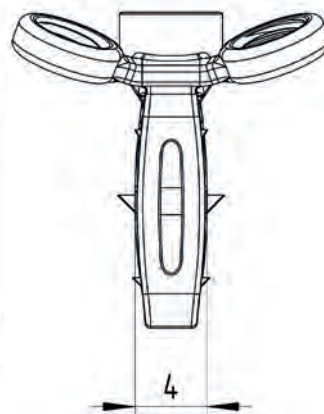
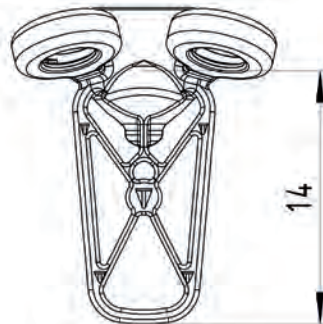
16 x 6 x 8 mm

16 x 5 x 10 mm

Height

Thickness

Width



C-LOX® Cages

Titanium

Product Code	Dimensions		
	Height	Thickness	Width
134-0144-08	14 mm	4 mm	8 mm
134-0146-08	14 mm	6 mm	8 mm
134-0164-08	16 mm	4 mm	8 mm
134-0165-10	16 mm	5 mm	10 mm
134-0166-08	16 mm	6 mm	8 mm
134-0167-10	16 mm	7 mm	10 mm
134-0185-10	18 mm	5 mm	10 mm
134-0187-10	18 mm	7 mm	10 mm
134-0206-12	20 mm	6 mm	12 mm
134-0208-12	20 mm	8 mm	12 mm



16 x 7 x 10 mm

18 x 5 x 10 mm

18 x 7 x 10 mm

20 x 6 x 12 mm

20 x 8 x 12 mm



C-LOX[®] Templates

Titanium

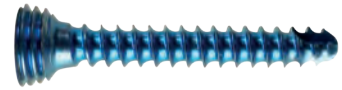
Product Code	Dimensions		
	Height	Thickness	Width
134-9144-08	14 mm	4 mm	8 mm
134-9146-08	14 mm	6 mm	8 mm
134-9164-08	16 mm	4 mm	8 mm
134-9165-10	16 mm	5 mm	10 mm
134-9166-08	16 mm	6 mm	8 mm
134-9167-10	16 mm	7 mm	10 mm
134-9185-10	18 mm	5 mm	10 mm
134-9187-10	18 mm	7 mm	10 mm
134-9206-12	20 mm	6 mm	12 mm
134-9208-12	20 mm	8 mm	12 mm



Screws (Locking Selfdrilling Cortical, C-LOX)

Locking Selfdrilling Cortical Screw

Titanium, Star-Drive Head, self-tapping with three flute cutting edge



Product Code	Description	
	Total Length	Thread Length
245-427-08	10 mm	8 mm
245-427-10	12 mm	10 mm
245-427-12	14 mm	12 mm
245-427-14	16 mm	14 mm
245-427-16	18 mm	16 mm
245-427-18	20 mm	18 mm
245-427-20	22 mm	20 mm

Screwdriver Handle

Silicone

sterilizable up to 134°C / 273°F

247-0102-00



Torque Limiting Screwdriver

Torque 3 Nm

blue, Silicone, AO

sterilizable up to 134°C / 273°F

247-0104-00



C-LOX Screwdriver Shaft 2.7

Star-Drive, 135mm length, AO

134-0800-27

