C-LOX®

Makes the lame walk again.

Special Thanks to Dr. John Innes

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:

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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 slimmer 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.

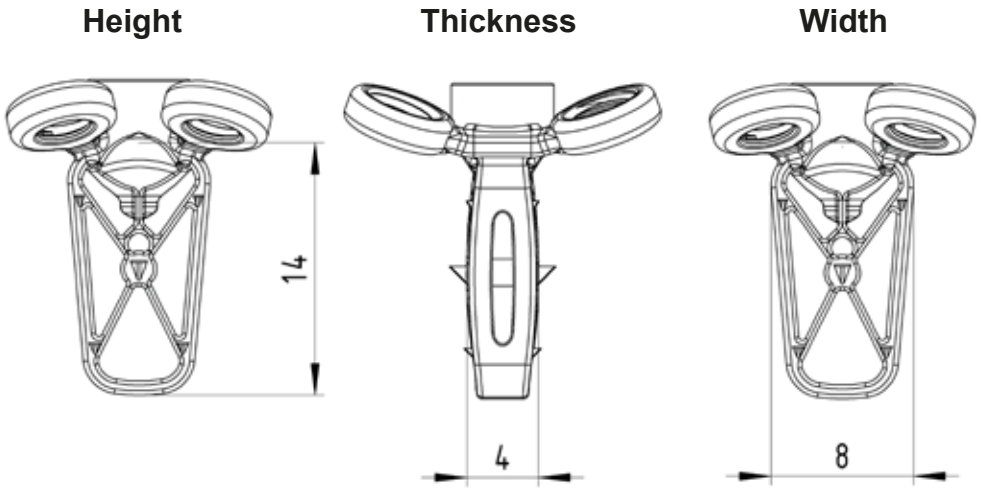
Select the drill guide according to the screw Length intended to use. Attach the Drill Guide to the Implant and use the dedicated 2.0mm drill bit to drill the hole for the Locking Cortex Screws . This drill bit forms a unit with the Drill Guide and will create the hole in the vertebral body to guide the self tapping screw. Screw Lengths are selected pre-operatively from measurements on the preoperative radiographs in precise latero-lateral projection. The four Locking Cortex Screws 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 ®

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



C-LOX ® Cages

Titanium

	Dimensions			
Product Code	**Height**	**Thickness**	**Width**	**Price**
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

	Dimensions			
Product Code	**Height**	**Thickness**	**Width**	**Price**
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	

Locking Selfdrilling Cortex Screws

Titanium, Star-Drive Head, self-tapping

	Description		
Product Code	**Total Length**	**Thread Length**	**Price**
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

247-0102-00

Torque Limiting Screwdriver

Torque 3 Nm
blue, Silicone, AO
sterilizable up to 134°C

247-0104-00

C-LOX Screwdriver Shaft 2.7

Star-Drive, 135mm lenght, AO

134-0800-27

C-LOX ® Locking Drill Guides

Steel

for 2.0mm drills, for 2.7mm screws

Product Code	Description	Price
164-0027-10	10 mm working end	
164-0027-12	12 mm working end	
164-0027-14	14 mm working end	

Product Code	Description	Price
164-0027-16	16 mm working end	
164-0027-18	18 mm working end	
164-0027-20	20 mm working end	

C-LOX Drill

Product Code	Ø (mm)	Connection	Price
148-0081-20	2.0	AO QC	
148-0081-25	2.5	AO QC	

C-LOX Spinal Curette

22cm

134-0700-22

C-LOX Implantation Placement Rod

22 cm

134-0750-22

C-LOX Distractor

90mm deep, 90° curved

134-0750-16

C-LOX ® Set

Implantats and Instruments

Contents:
Sterilization Tray
each 1x Spinal Cage
each 1x Seizing Cage
2 Placement Rod
Spinal Curette
Screwdriver Shaft
Screwdriver Handle Silicone
each 1x Locking Drill Guide
2 Drills (2.0/2.5mm)
each 5x screws (10, 12, 14, 16, 18, 20mm)

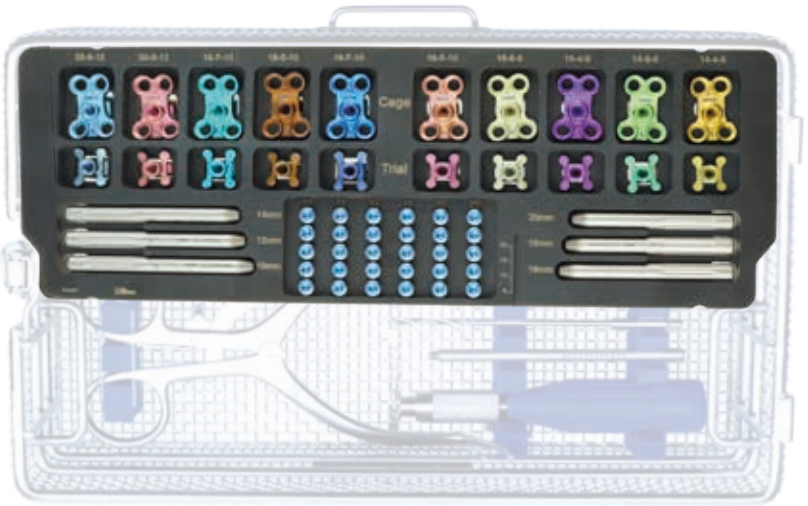
134-0100-01

C-LOX ® Set Upgrade auf neue Version

Upgrade for existent Set

Contents:
each 1x Spinal Cage
each 1x Locking Drill Guide
each 5x screws (10, 12, 14, 16, 18, 20mm)
Screwdriver Shaft
Bone Drill 2.0mm
Tray inset for existent Box

134-0100-02



Video

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