

Surgical Technique

STROMBOLI-J

DLIF 3D Printed Titanium Cage

Built-in Fixation

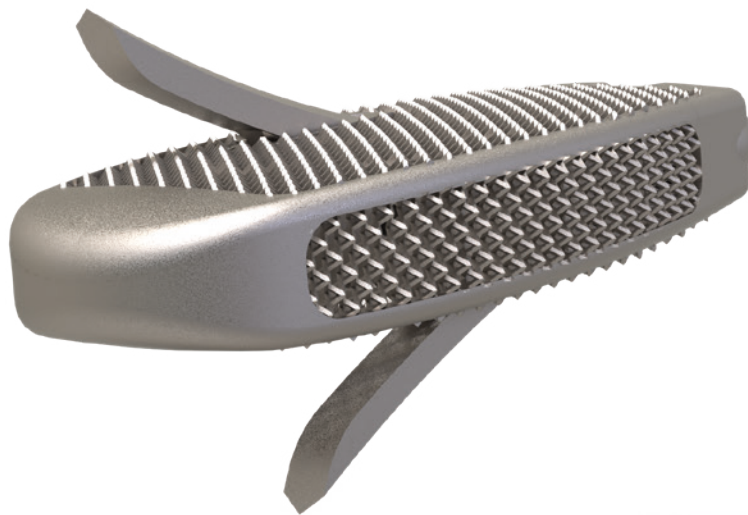


Table of Contents

Stromboli-J Overview.....4

STROMBOLI-J, DLIF - SURGICAL PROCEDURE.....8

DLIF Surgery Set.....19

Stromboli-J Overview

Stromboli-J, DLIF 3D printed Interbody Fusion Cage, presents the following main characteristics:

- **Excellent Stability**

The unique “net” structure obtained through additive manufacturing technology, provides strong primary fixation and elimination of implant migration risk.

- **Wide Variety of Footprints, Heights & Lordosis Angles**

One system matching patients’ natural anatomy and surgeons’ preferences.

- **Bone InGrowth Technology**

Pore size of the net structure and the surface roughness of the implant edges facilitate fast and effective osteointegration.

The elasticity modulus of the implant, similar to PEEK, is close to natural bone characteristics and is a key success factor.

- **Additional Built-in Fixation**

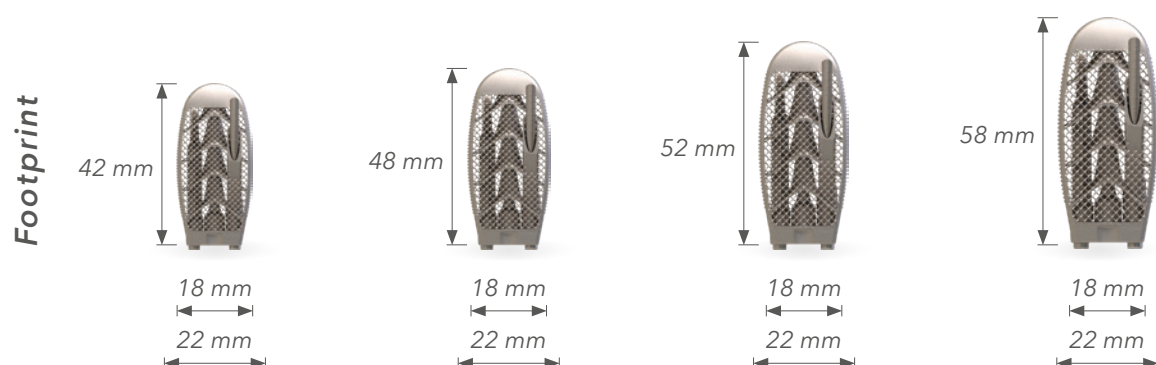
Built-in pins contribute to further enhance primary fixation, as already guaranteed by the excellent stability provided by the “net” structure.

By using pins instead of screws as an additional fixation feature, there is no extra material on the implant required to secure the fixation mechanism. Thus, the elasticity features of the implant are not compromised, allowing for bone in-growth.

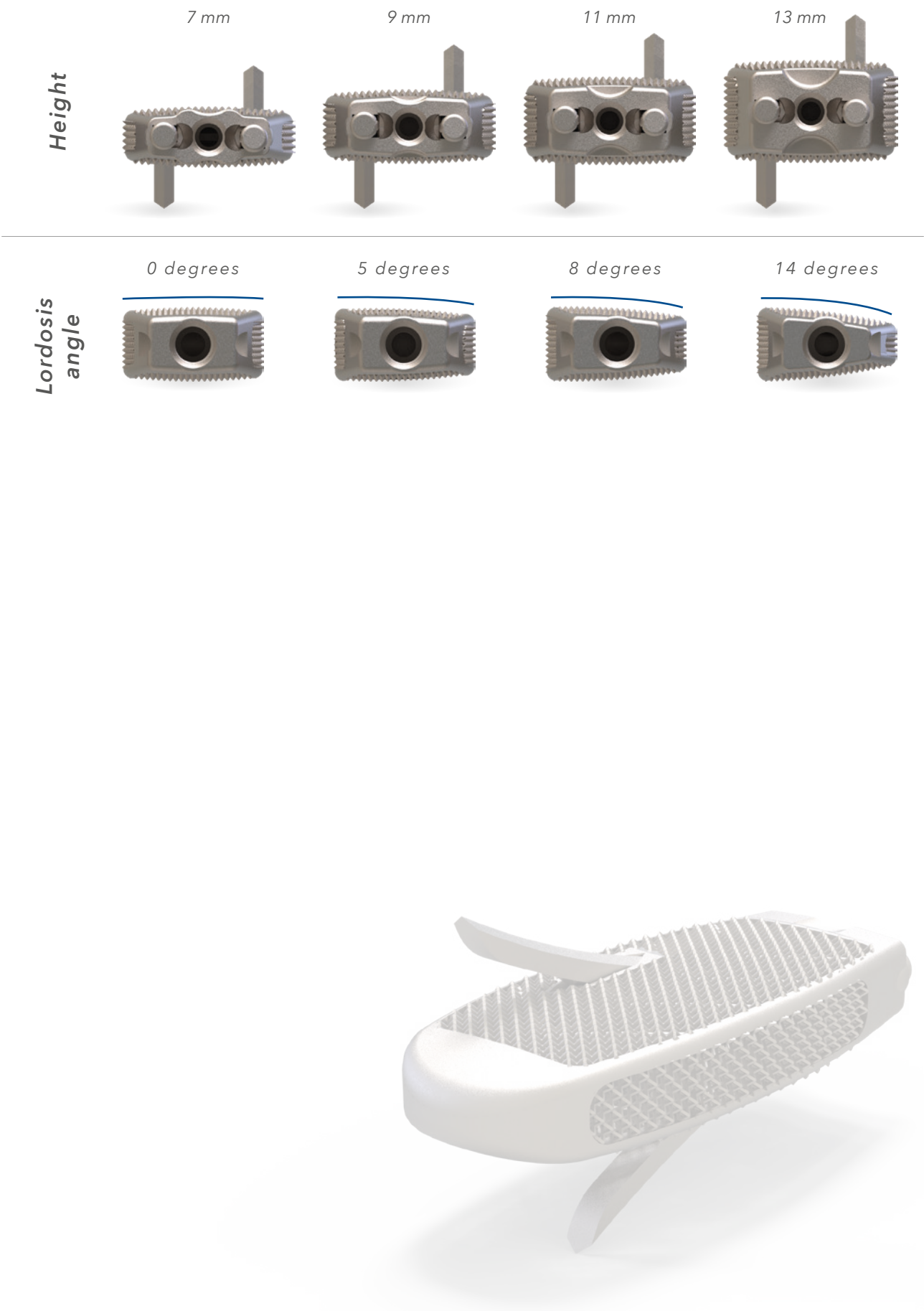
The diagonal position of the pins secures rotation stability. Stromboli-J is manufactured in one production step, thanks to the additive manufacturing technology used.

No additional instruments are required for implantation: the pins are extracted and locked into the implant by a feature on the amended original Stromboli implant inserter. It is possible to retract the pins, when needed.

For Stromboli-J, Tsunami Medical offers eight footprints and four heights with four possible lordosis angles, as outlined below.



Stromboli-J Overview



Product Reference Codes

Ref. Code	Dimensions	Ref. Code	Dimensions
ACXJ4218**00	Footprint Size 42x18mm - Angle 0° Range of Heights [mm] 07,09,11,13	ACXJ4222**00	Footprint Size 42x22mm - Angle 0° Range of Heights [mm] 07,09,11,13
ACXJ4218**05	Footprint Size 42x18mm - Angle 5° Range of Heights [mm] 07,09,11,13	ACXJ4222**05	Footprint Size 42x22mm - Angle 5° Range of Heights [mm] 07,09,11,13
ACXJ4218**08	Footprint Size 42x18mm - Angle 8° Range of Heights [mm] 09,11,13	ACXJ4222**08	Footprint Size 42x22mm - Angle 8° Range of Heights [mm] 09,11,13
ACXJ4218**14	Footprint Size 42x18mm - Angle 14° Range of Heights [mm] 09,11,13	ACXJ4222**14	Footprint Size 42x22mm - Angle 14° Range of Heights [mm] 09,11,13
ACXJ4818**00	Footprint Size 48x18mm - Angle 0° Range of Heights [mm] 07,09,11,13	ACXJ4822**00	Footprint Size 48x22mm - Angle 0° Range of Heights [mm] 07,09,11,13
ACXJ4818**05	Footprint Size 48x18mm - Angle 5° Range of Heights [mm] 07,09,11,13	ACXJ4822**05	Footprint Size 48x22mm - Angle 5° Range of Heights [mm] 07,09,11,13
ACXJ4818**08	Footprint Size 48x18mm - Angle 8° Range of Heights [mm] 09,11,13	ACXJ4822**08	Footprint Size 48x22mm - Angle 8° Range of Heights [mm] 09,11,13
ACXJ4818**14	Footprint Size 48x18mm - Angle 14° Range of Heights [mm] 09,11,13	ACXJ4822**14	Footprint Size 48x22mm - Angle 14° Range of Heights [mm] 09,11,13
ACXJ5218**00	Footprint Size 52x18mm - Angle 0° Range of Heights [mm] 07,09,11,13	ACXJ5222**00	Footprint Size 52x22mm - Angle 0° Range of Heights [mm] 07,09,11,13
ACXJ5218**05	Footprint Size 52x18mm - Angle 5° Range of Heights [mm] 07,09,11,13	ACXJ5222**05	Footprint Size 52x22mm - Angle 5° Range of Heights [mm] 07,09,11,13
ACXJ5218**08	Footprint Size 52x18mm - Angle 8° Range of Heights [mm] 09,11,13	ACXJ5222**08	Footprint Size 52x22mm - Angle 8° Range of Heights [mm] 09,11,13
ACXJ5218**14	Footprint Size 52x18mm - Angle 14° Range of Heights [mm] 09,11,13	ACXJ5222**14	Footprint Size 52x22mm - Angle 14° Range of Heights [mm] 09,11,13
ACXJ5818**00	Footprint Size 58x18mm - Angle 0° Range of Heights [mm] 07,09,11,13	ACXJ5822**00	Footprint Size 58x22mm - Angle 0° Range of Heights [mm] 07,09,11,13
ACXJ5818**05	Footprint Size 58x18mm - Angle 5° Range of Heights [mm] 07,09,11,13	ACXJ5822**05	Footprint Size 58x22mm - Angle 5° Range of Heights [mm] 07,09,11,13
ACXJ5818**08	Footprint Size 58x18mm - Angle 8° Range of Heights [mm] 09,11,13	ACXJ5822**08	Footprint Size 58x22mm - Angle 8° Range of Heights [mm] 09,11,13
ACXJ5818**14	Footprint Size 58x18mm - Angle 14° Range of Heights [mm] 09,11,13	ACXJ5822**14	Footprint Size 58x22mm - Angle 14° Range of Heights [mm] 09,11,13

** Choose preferred height and use it instead of the asterisks to get the final reference.



STROMBOLI-J

Stromboli-J Intended Use

Stromboli-J is intended to recreate and maintain distance between vertebrae to support biologic fusion in the thoracic, lumbar or lumbar-sacral spine zone.

When surgeons deem necessary to add an additional bone growth accelerator, Tsunami Medical's Universal Filling System supports the bone substitute filling procedure, either at pre-implantation or post-implantation stage of the surgical procedure, in an effective way.

Because of the built-in fixation with pins feature Stromboli-J doesn't require supplemental fixation. However, based on surgeons' preference Stromboli-J can be used in combination with supplemental fixation, such as:

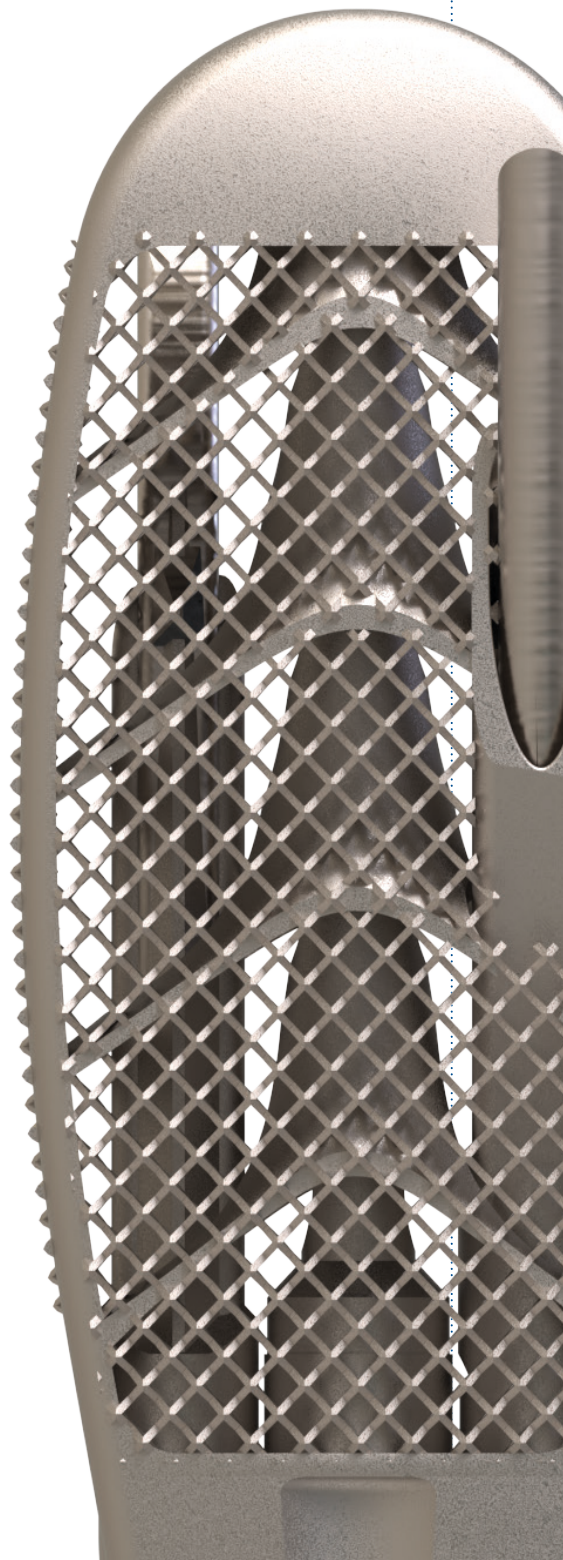
- Posterior stabilisation with pedicle screw systems
- Lateral fixation
- Interlaminar stabilisation devices

Interbody fusion cages are intended to be used exclusively by professionals with appropriate trainings accomplished. The Instructions For Use (IFU) should be respected at all times.

Indications

Stromboli-J is intended for Thoracic and Lumbar interbody fixation for the following indications:

- (1) Degenerative disc disease.
- (2) Spondylolisthesis.
- (3) Spinal stenosis.
- (4) Trauma.
- (5) Tumour.
- (6) Pseudo-arthrosis.
- (7) Instability of motion segments.



Patient Positioning

Place the patient in supine position for lateral approach to lower lumbar levels of the spine. Approach the required level following the known surgical technique hereto. This patient position facilitates additional posterior fusion options without the need for turning the patient, with all related benefits. A pillow below the belly is recommended to flatten the lumbar lordosis, which facilitates an easier and safer entrance into the intervertebral disc space.

When the surgeon prefers a lateral patient position, surgical steps are similar as described below; only with fluoroscopic imaging this 90 degrees deviation of position needs to be respected.

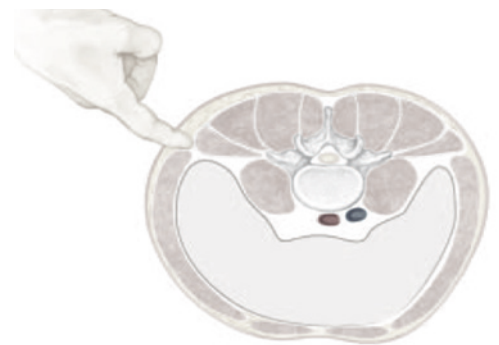


Patient in prone position.

Surgical Incision Preparation

Map out through one abdominal pre-surgery MRI in prone position (like the surgical position) a safe corridor through the psoas muscle to the lumbar spine. Fluoroscopy is recommended, to ensure targeting the anterior two-third of the affected disc.

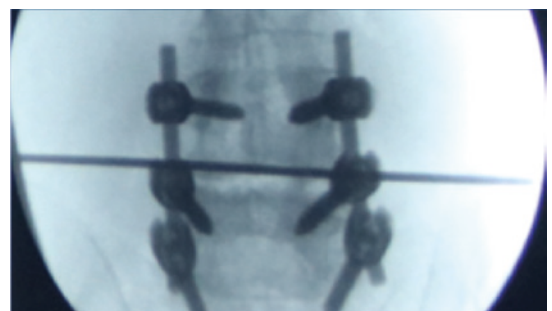
The anterior third of the psoas muscle is the most likely safe zone for avoiding the neural elements of the lumbar plexus.



Safe corridor through psoas muscle to the lumbar spine.

Note

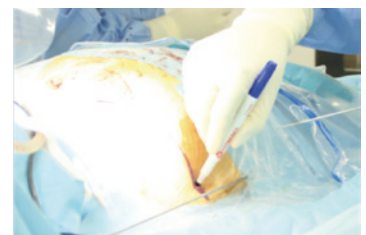
Use a longitudinal incision if multiple levels will be fused.



X-ray of skin incision

Skin Incision

Locate the correct level and incision with fluoroscopic views. Make a skin incision targeting the anterior third of the intervertebral disc space.



Two moments of the skin incision procedure during surgery.

First Steps' Summary



- Direct Observation of Muscle Layers
 - Follow Internal Abdominal Wall
 - Posterior to Anterior Abdominal Wall
- Finger Sweep

Feel for:

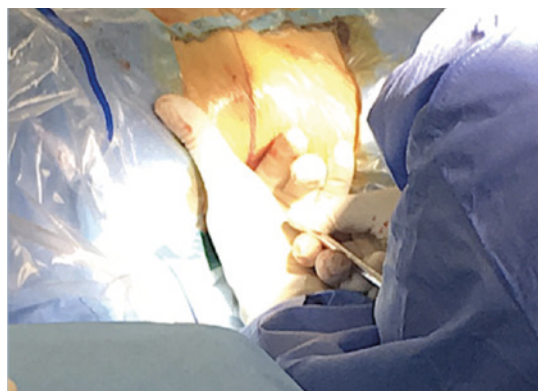
- Quadratus Muscle
- Transverse Process
- Surface of the Psoas Muscle

Vertebral Disc Entering Procedure

Once the skin incision is made and the subcutaneous tissue is released, the oblique muscles of the abdomen should be visible. Separate the muscle fibers with blunt dissection and enter the retroperitoneal space. Move the peritoneum anterior with forefinger and continue blunt dissection to palpate down to the transverse process. Slide forward to the psoas muscle. After reaching the psoas muscle using the finger, it is time to enter with the first access instrument (assemble **BOK-LD-14-1/2**); it is possible to connect the instrument to a neuro monitoring system. The initial instrument has to be fixed in the disc space, using the hammer if necessary.

This instrument has to be positioned with maximum accuracy, in the middle of the disc space, and will guide the positioning of the retractor system in the next steps.

The first access instrument is composed by one internal mandrel (**BOK-LD-14-2**), with round tip, and a smooth cannula (**BOK-LD-14-1**); this allows the surgeon to reach the disc through the psoas muscle without risk of possible damage to muscle and nerve systems.

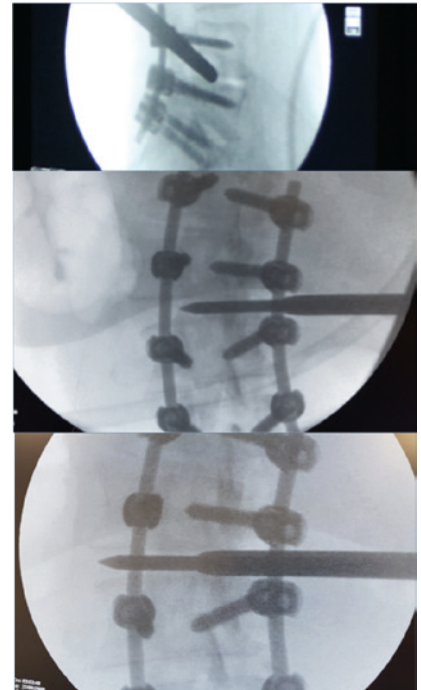


Two moments of the vertebral disc entering procedure during surgery.

Once the psoas muscle has been crossed and the disc has been reached in the optimal central position in lateral view, the central round mandrel must be removed and the conic mandrel inserted (**BOK-LD-14-3**), facilitating easy penetration of the annulus of the disc and fixation of the cannula for the next steps.

Is very useful to also push the cannula inside the disc space to assure a strong and reliable fixation, which is very important for the next steps of the surgical procedure.

To support easy entry of the disc space, a special cannulated instrument (**BOK-LD-14-4**) is available to push the cannula into the disc space.



X-rays portraying three moments of the vertebral disc entering procedure with Stromboli First Access Guide (BOK-LD-14-1,2,3,4).



BOK-LD-14

Dissection Cannulas

Three additional cannulas (**BOK-LD-13-02/03/04**), each with an increased diameter, need to be placed on the initial cannula (**BOK-LD-13-1**) to gently enlarge the psoas muscle fibers, creating the space to position the GHOST retractor (**BOK-LD-04-22**).



Enlargement of psoas muscle fibers during surgery.



BOK-LD-13-*

Retractor Assembling

Slide the retractor holder (**BOK-LD-05-22**) inside the Ghost retractor (**BOK-LD-04-22**) and push the square end of the holder into the metallic ring of the retractor till it stops (there is a hard stop on the holder).



Retractor Positioning

Remove all the dissection cannulas, leaving only the initial instrument well fixed into the disc space.

Once all the dissection cannulas have been introduced, reaching the disc wall, position the assembled GHOST retractor.

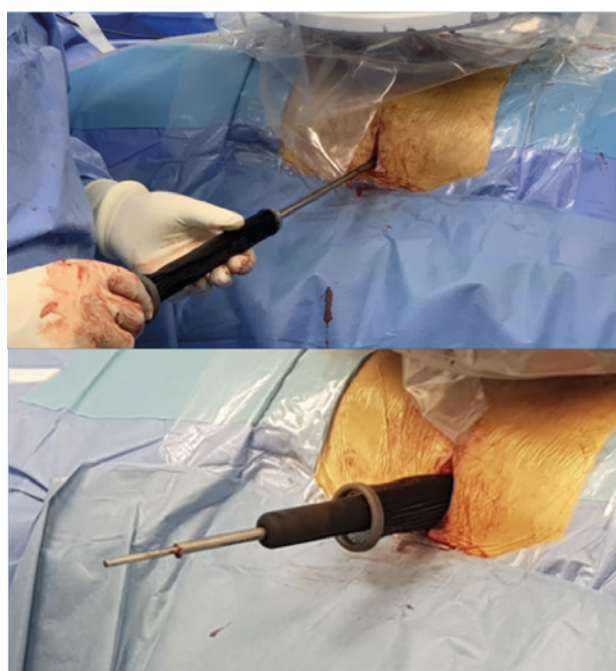
Gently push the GHOST retractor on the cannulas inside the patient, till reaching the vertebral body, gently rotating the retractor helps to cross the soft tissues.

Use fluoroscopic control when reaching the vertebrae.

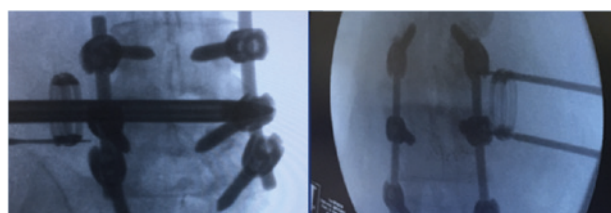
After reaching the vertebral body, crossing the psoas muscle, fix the GHOST on the vertebral body, using the pin wires (**BOK-LD-06**).

Gently hammer (using **TH002**) the pin wires into the vertebral body to support fixation of the metallic ring of the GHOST retractor on the lateral part of the vertebral body.

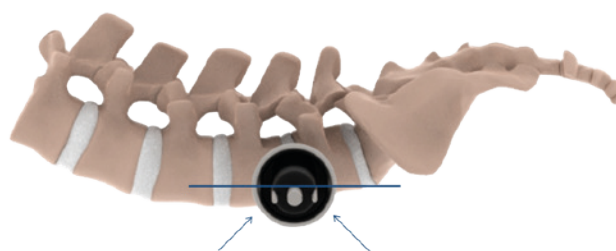
For correct positioning of the fixation wires, use the two channels on the retractor holder, and slide the wires inside. The channels are designed to guide the wires through the fixing holes on the GHOST metallic ring, and enter the vertebral body. Control the position of the GHOST retractor: the wire channels have to be in cranio/caudal position.



Positioning of the assembled Ghost retractor during surgery.



X-rays of two moments of the Ghost retractor positioning during surgery.



Correct positioning of the Ghost retractor.

Fixation Wires Spreading

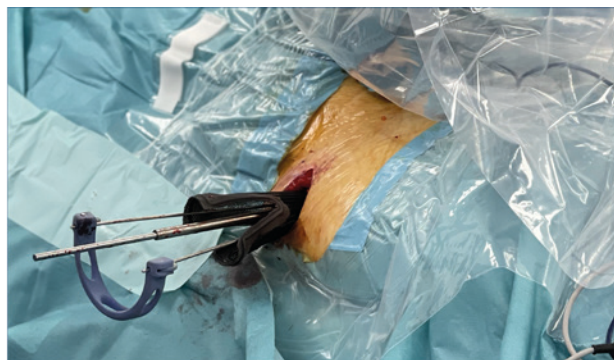
After fixing the Ghost metallic ring on the vertebral body, the retractor inserter and the initial metallic tube should be removed. The retractor is safely and strongly fixed on the vertebral bodies.

Attach the fixing wire spreader (**BOK-LD-15**) onto the fixing wires (**BOK-LD-06-1/2/3/4**).

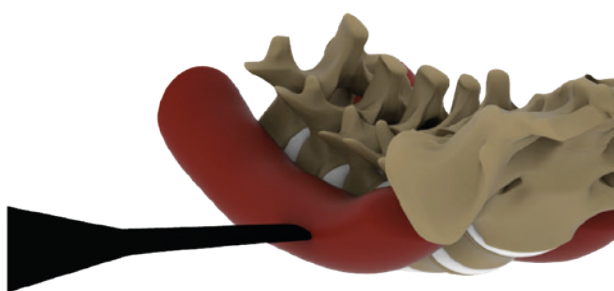
Once the retractor inserter has been removed, the Ghost retractor will collapse under the pressure of the soft tissues and psoas muscle, leaving all the organs, muscles and nerves in natural position, without any stress on the respective tissues.

Discectomy

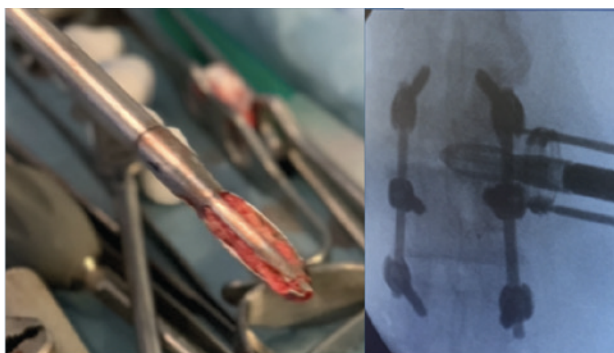
Two different shavers are available in the instrument set. First use the round shavers (**BOK-LD 1007/1009/1011/1013-FC**) to prepare the space for the parabolic ones. The parabolic shavers (**BOK-LD-1107/1109/1111/1113-FC**) are particularly indicated to prepare the vertebral endplate. Proceed progressively from the smaller to the bigger size to prepare the disc space for the implant. The anatomic patient structure needs to be verified and respected to use the most suitable one as last one: once the cartilage on the endplates has been removed, the right size (in height) has been reached. Adequate cleaning of the endplates is important to enable the provision of a blood supply to the implant. However, excessive cleaning or use of a rasp may weaken the endplate and result in subsidence of the implant.



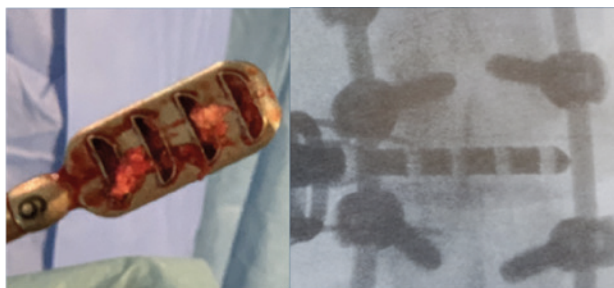
Fixing wire spreader attached onto the fixing wires during surgery.



Position of Ghost retractor through the psoas muscle.



Round shaver during surgery, live picture and X-rays.



Parabolic shaver during surgery, live picture and X-rays.

Implant Dimension Choice

Height

After completing disc cleaning, position the implant probe (**BOK-LD1207/1209/1211/1213-FC**) on the silicone handle (**BOK-LC-55X**) and gently enter into the disc space.

Gentle and controlled blows with the hammer (**TH002**) can support entering the disc space, when needed.

Probes are available in four heights dimensions (7, 9, 11, 13 mm) and they are flat (0 degrees lordosis angle).

Lordosis Angle

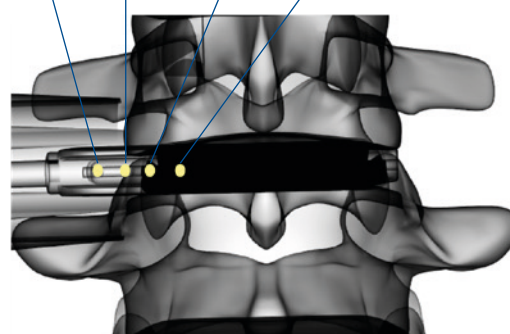
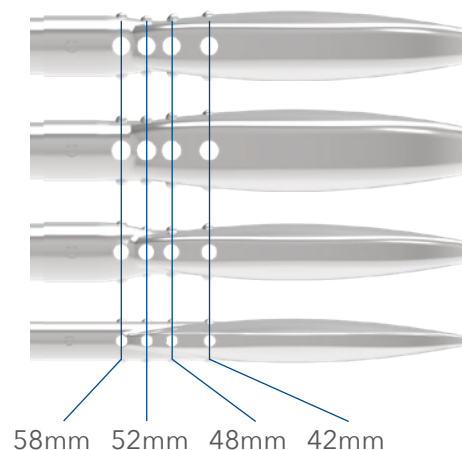
Pre-operative radiological imaging is strongly recommended to decide on the lordosis angulation of the implant.

Length

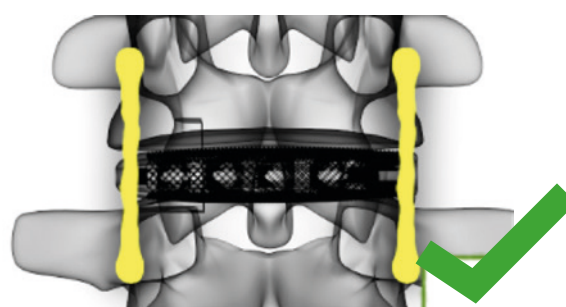
After defining the required height, the required length of the implant is defined based on the holes in the instrument which should be examined through fluoroscopic control (AP):

The tip of the probe should hit the contralateral wall of the vertebral bodies, whereas the holes in the instrument indicate the length of the implant: the hole that shows on the wall at the entry point represents the required length: see also images below.

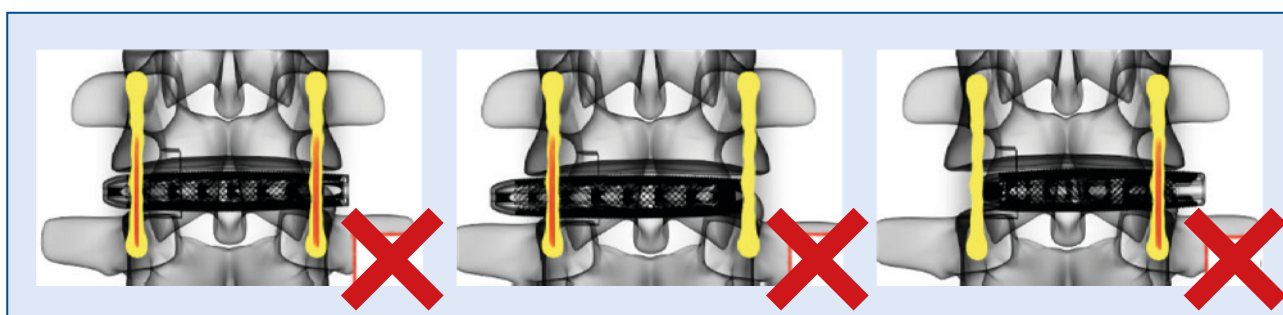
A lateral cage should cover as much of the vertebral bodies' endplates as possible, and thus should be placed from cortex to the contralateral cortex, but it should never exceed the lateral cortex wall.



Practical example on length definition through probe usage.



Correct implant length choice.



Three examples of not correct implant length choice.

Implant Reference Codes

The correct implant size is the one that corresponds with the height of the probe and the length, indicated by the holes in the probe. The required lordosis angle is determined after evaluation of (pre-OP) fluoroscopy imaging. Width (either 18 or 22 mm) is following surgeon's preference.

Example

Cage Height > Probe height: 9 mm

Cage Length > Probe length hole: 52 mm

Cage Width > 22 mm

Cage Angle > Lordosis angle: 8° (to be chosen after evaluating radiological imaging)

	ACXJ	5222	09	08
Cage Code		Footprint Length x Width	Height	Lordosis Angle

Implant Preparation

The implant is delivered in a double rigid blister packaging.

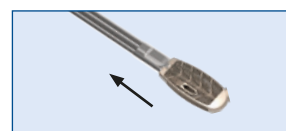
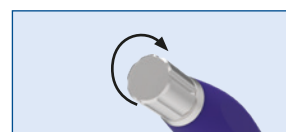
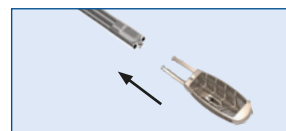
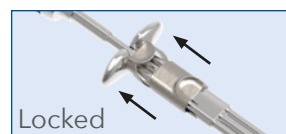
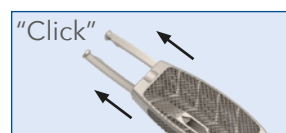
Remove the blister in the unsterile field (rotation nurse), always carefully paying attention on the preservation of the sterility of the implant, which is in the internal blister. Drop the internal blister into the sterile field for further processing by the scrub technician.

Retract the pins completely till an audible **Click** tells you the pins are fully retracted and fixed; The distal part of the pins are completely inside the cage.

On the implant inserter, make sure to slide the safety clip (half way the shaft) up into the **Locked position**, which secure the surfaces to hammer on into the most proximal position (upwards).

Slide the implant holder shaft (**BOK-LDJ-02**) into the implant holder (**BOK-LDJ-01**).

Connect the implant to the implant holder by screwing till reaching a solid fixed position in order to avoid any problems during final implant positioning.



Implant positioning

A. Gently push the implant through the Ghost retractor till reaching the intervertebral space. The shape of the nose of the implant will help smooth entrance into the disc space.

Place the implant into its final position.

Introduction may require gentle hammering on the backside of the Implant Inserter. The implant Inserter may be used to manipulate the cage within the disc space, if required.

B. Push the release button on the safety clip and completely slide distally (down)

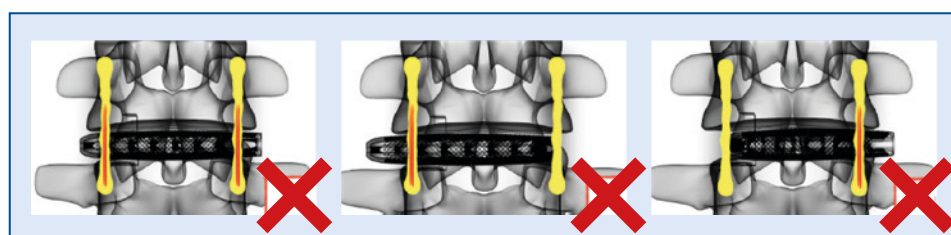
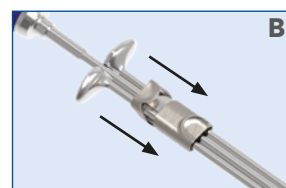
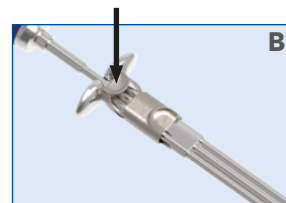
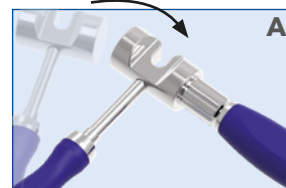
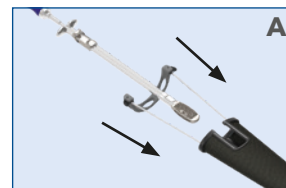
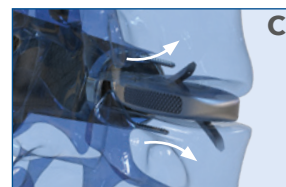
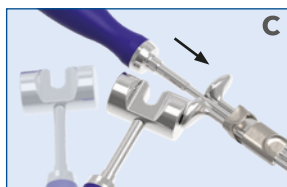
C. Use the hammer (**TH002**) to extract the pins by tapping on the hammer surfaces on the lateral side of the implant Holder to final, which securely locks the pins into the implant.



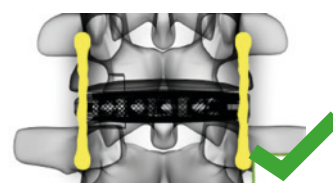
TH002

Once the cage is in the correct position and the pins are fully extracted, the Implant Inserter should be removed: The Implant is released by turning the knob of **BOK-LDJ-02** counterclockwise, leaving the implant in its optimal and securely fixed position.

Only when needed, the pins can be retracted by using the pin extractor (**BOK- J-EX01**). This operation has to be carefully monitored with fluoroscopy support: both AP and Lateral view.



Three examples of **not correct** implant length choice.



Retractor Removal

Once the final implant position is reached, remove the implant holder and after a last fluoroscopy control, the Ghost retractor can be removed; To this, the following procedure **MUST BE RESPECTED**:

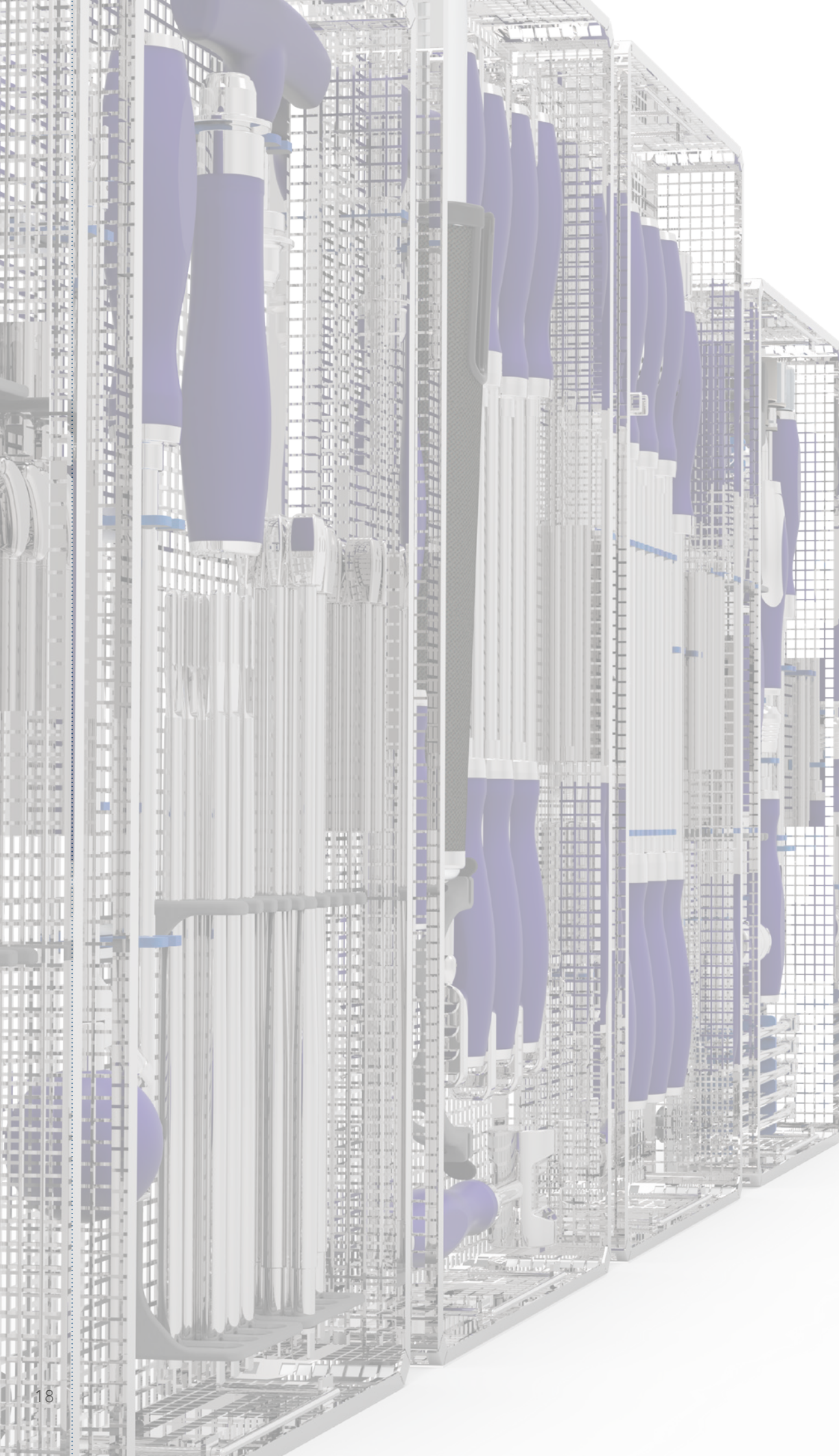
Detach and remove the Fixing wire spreader (**BOK-LD-15**).

Re-insert the retractor holder (**BOK-LD-05-22**) inside the Ghost retractor (**BOK-LD-04-22**), making sure the fixing wires fit the grooves in the the retractor holder and push the end of the holder into the metallic ring of the retractor till it stops (there is a hard stop on the holder). Use the Fixing wire Screwdriver (**BOK-LD-07**) to remove the fixing wires first. Then remove the retractor holder (**BOK-LD-05-22**) and the Ghost retractor (**BOK-LD-04-22**) **WHILE STILL ASSEMBLED** (so together in one piece).





**For more informations
on our products**



DLIF
Surgery Set



DLIF Surgery Set

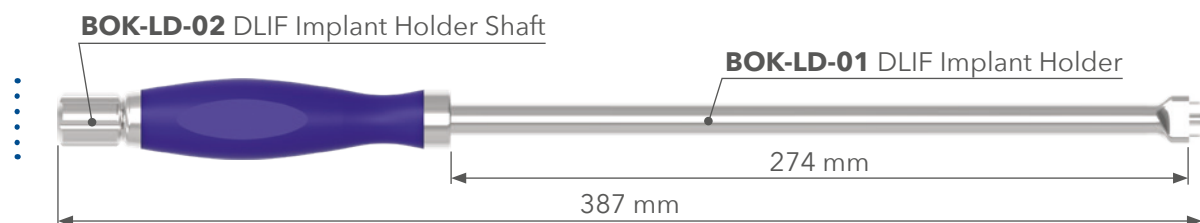
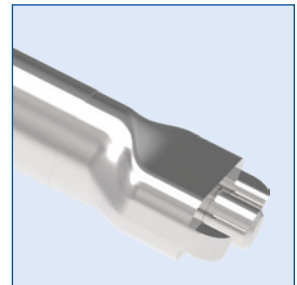
• First Generation

DLIF Implant Holder

Instrument Ref. Code:

BOK-LD-01

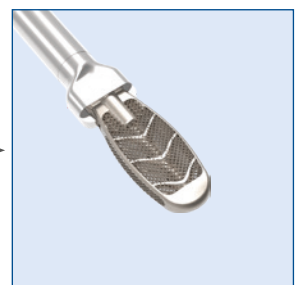
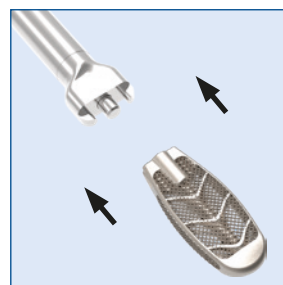
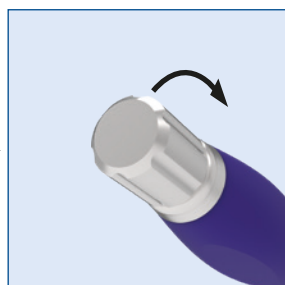
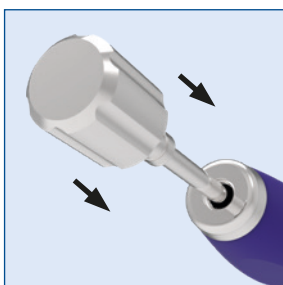
BOK-LD-02



Components:



Assembly Scheme:



Insert the Shaft in the Holder and screw the knob.

Connect the Cage to the coupling.

DLIF Implant Holder	
BOK-LD-01	DLIF Implant Holder
BOK-LD-02	DLIF Implant Holder Shaft

**Dimensional tolerance ± 2 mm



DLIF Surgery Set

• *Built-In Fixation*

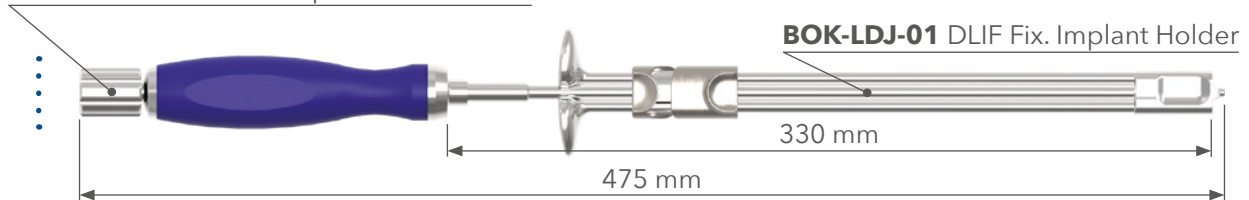
DLIF Fix. Implant Holder

Instrument Ref. Code: **BOK-LDJ-01**



BOK-LDJ-02

BOK-LDJ-02 DLIF Fix. Implant Holder Shaft

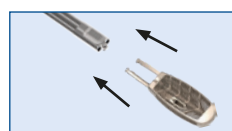


BOK-LDJ-01 DLIF Fix. Implant Holder

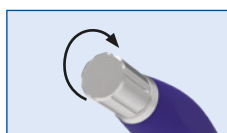
Components:



Usage Scheme:



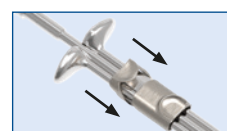
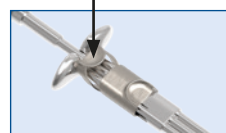
1. Extend the pins and insert in the Holder.



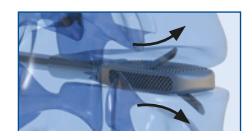
2. Screw the knob to lock the cage.



3. Use TH002 to facilitate cage entry.



4. Press the top button to release the clip.



5. Hammering on the surfaces to extend the pins

DLIF Fix. Implant Holder	
BOK-LDJ-01	Implant Holder
BOK-LDJ-02	Implant Holder Shaft

**Dimensional tolerance ± 2 mm



DLIF Surgery Set

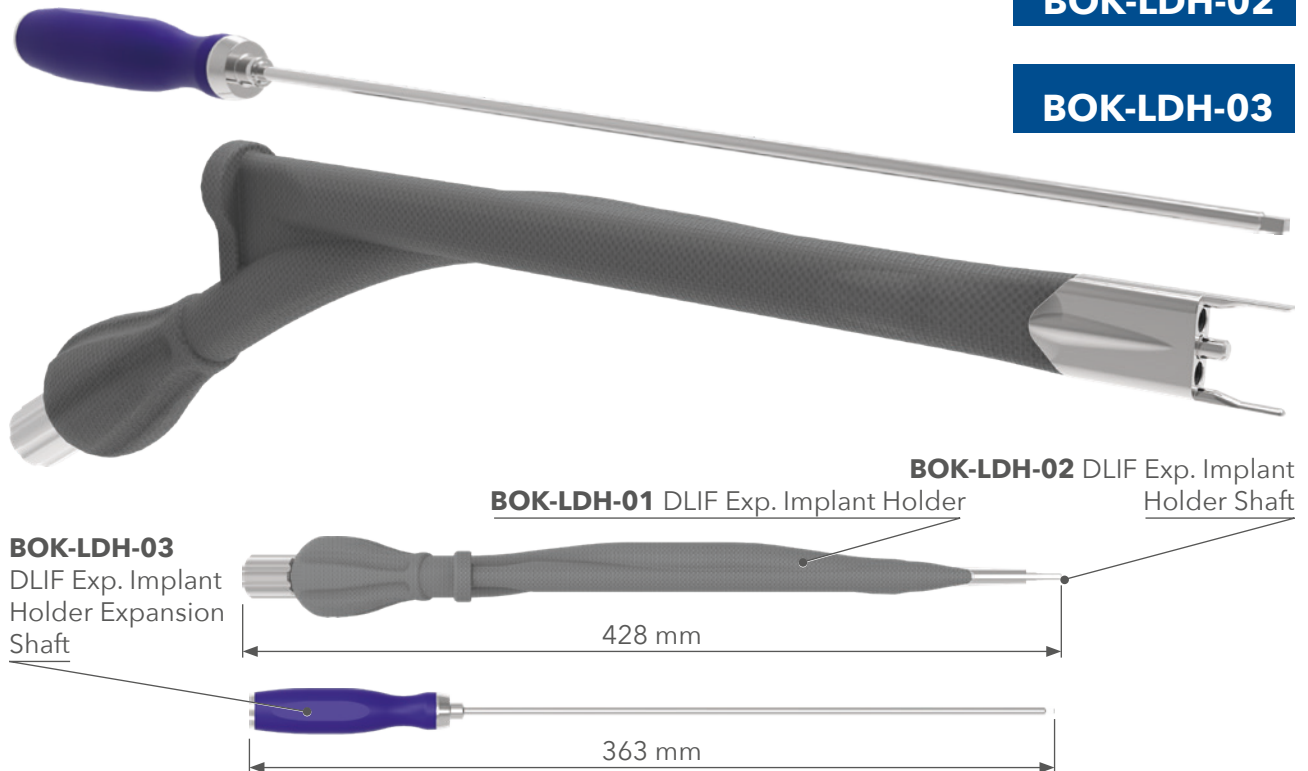
• Expandable

DLIF Exp. Implant Holder

Instrument Ref. Code: **BOK-LDH-01**

BOK-LDH-02

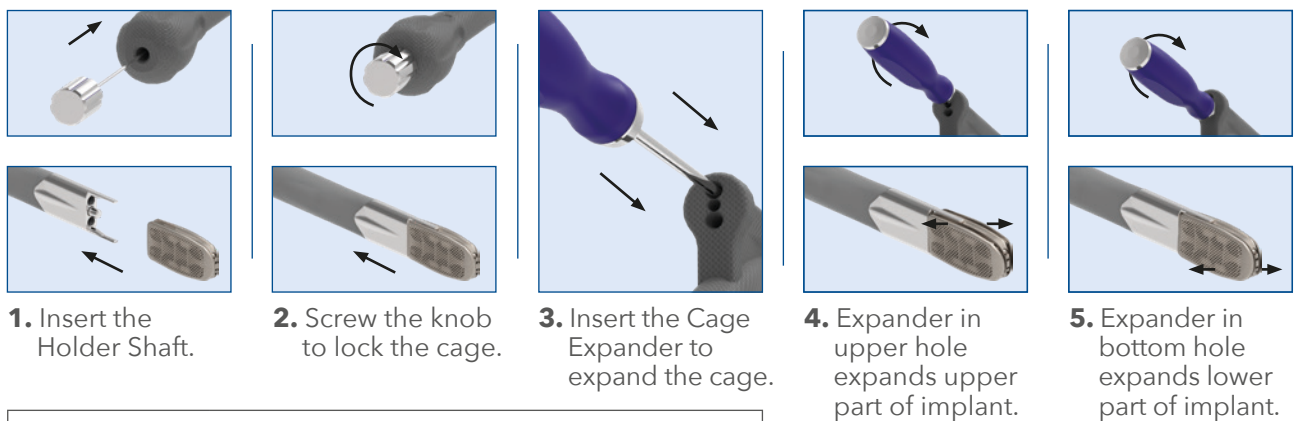
BOK-LDH-03



Components:



Usage Scheme:



DLIF Exp. Implant Holder	
BOK-LDH-01	DLIF Exp. Implant Holder
BOK-LDH-02	DLIF Exp. Implant Holder Shaft
BOK-LDH-03	DLIF Exp. Implant Holder Expansion Shaft



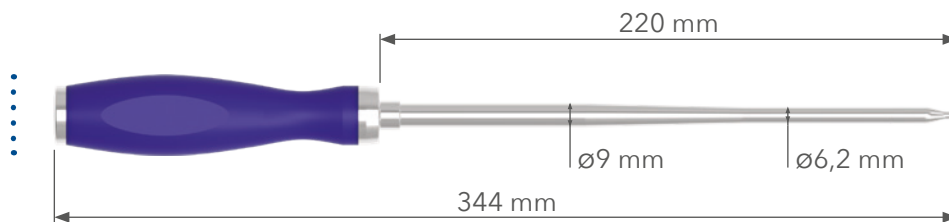
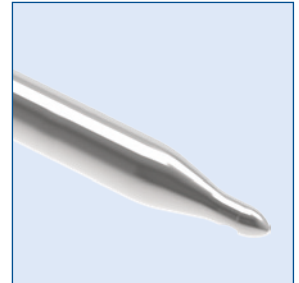
**Dimensional tolerance ± 2 mm

DLIF Surgery Set

• *Built-In Fixation*

Pin Extractor

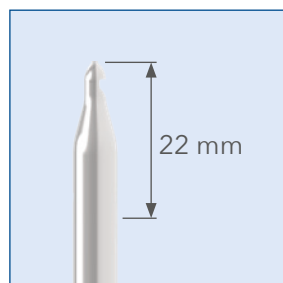
Instrument Ref. Code: **BOK-J-EX01**



Components:



Dimensions:



Pin Extractor

BOK-J-EX01

**Dimensional tolerance ± 2 mm



DLIF Surgery Set

- *First Generation*
- *Built-In Fixation*
- *Expandable*

DLIF Ghost Retractor

Instrument Ref. Code:

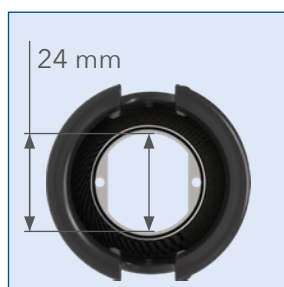
BOK-LD-04-22



Components:



Dimensions:



DLIF Ghost Retractor

BOK-LD-04-22

**Dimensional tolerance ± 2 mm



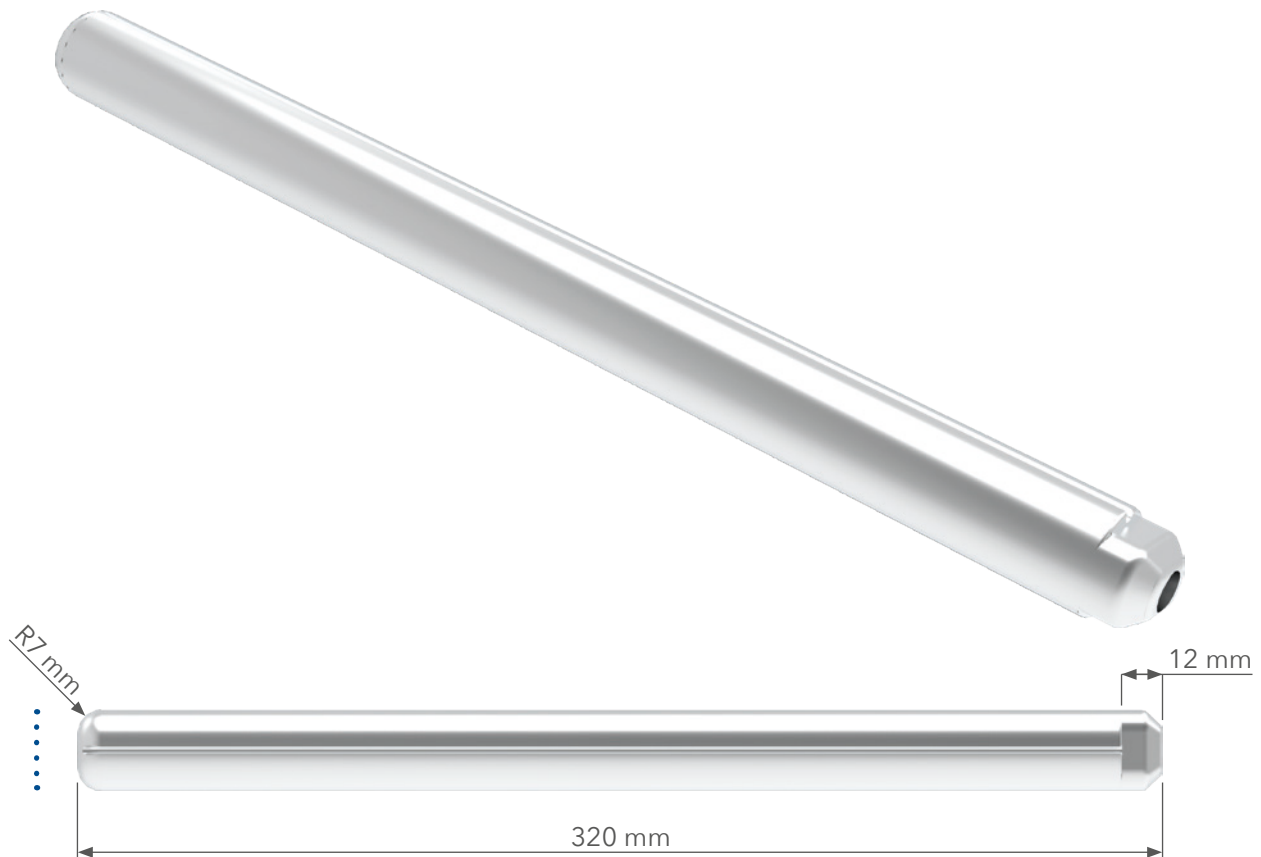
DLIF Surgery Set

- *First Generation*
- *Built-In Fixation*
- *Expandable*

Ghost Retractor Shaft

Instrument Ref. Code:

BOK-LD-05-22

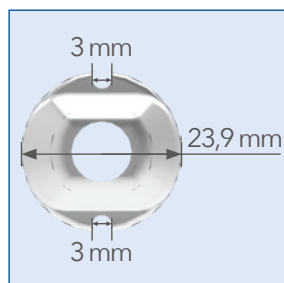


Components:

1



Dimensions:



Ghost Retractor Shaft

BOK-LD-05-22

**Dimensional tolerance ± 2 mm



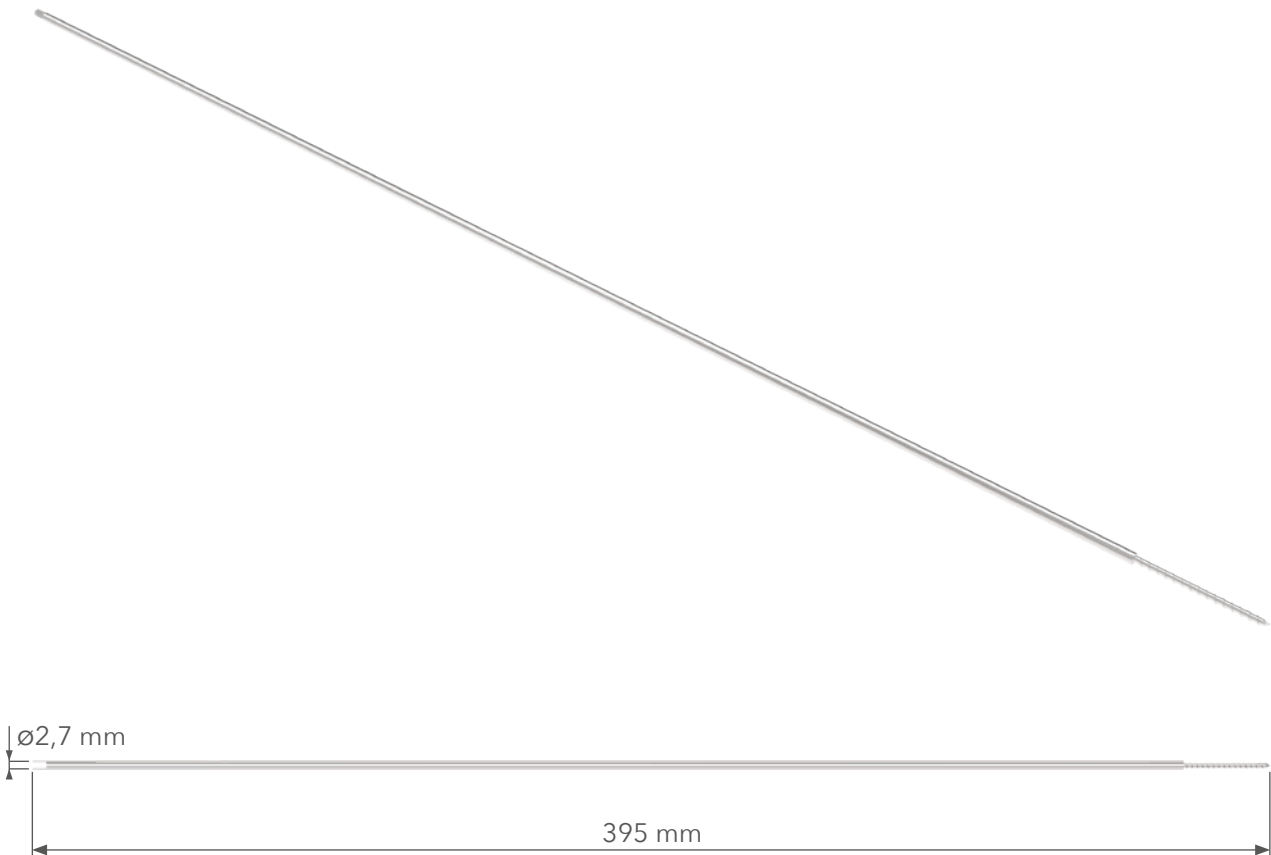
DLIF Surgery Set

- First Generation
- Built-In Fixation
- Expandable

Ghost Retractor Fixing Wire
four pieces

Instrument Ref. Code:

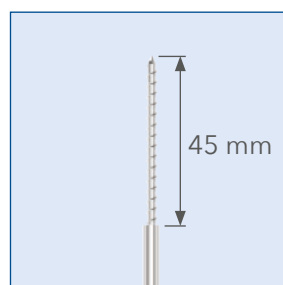
BOK-LD-06



Components:



Dimensions:



Ghost Retractor Fixing Wire four pieces

BOK-LD-06

**Dimensional tolerance ± 2 mm



DLIF Surgery Set

- *First Generation*
- *Built-In Fixation*
- *Expandable*

DLIF Fixing Wire Screwdriver

Instrument Ref. Code:

BOK-LD-07

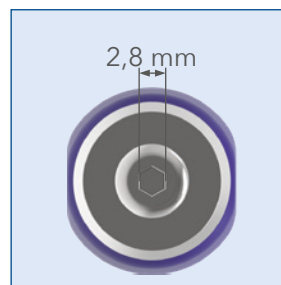


Components:

1



Dimensions:



DLIF Fixing Wire Screwdriver

BOK-LD-07

**Dimensional tolerance ± 2 mm



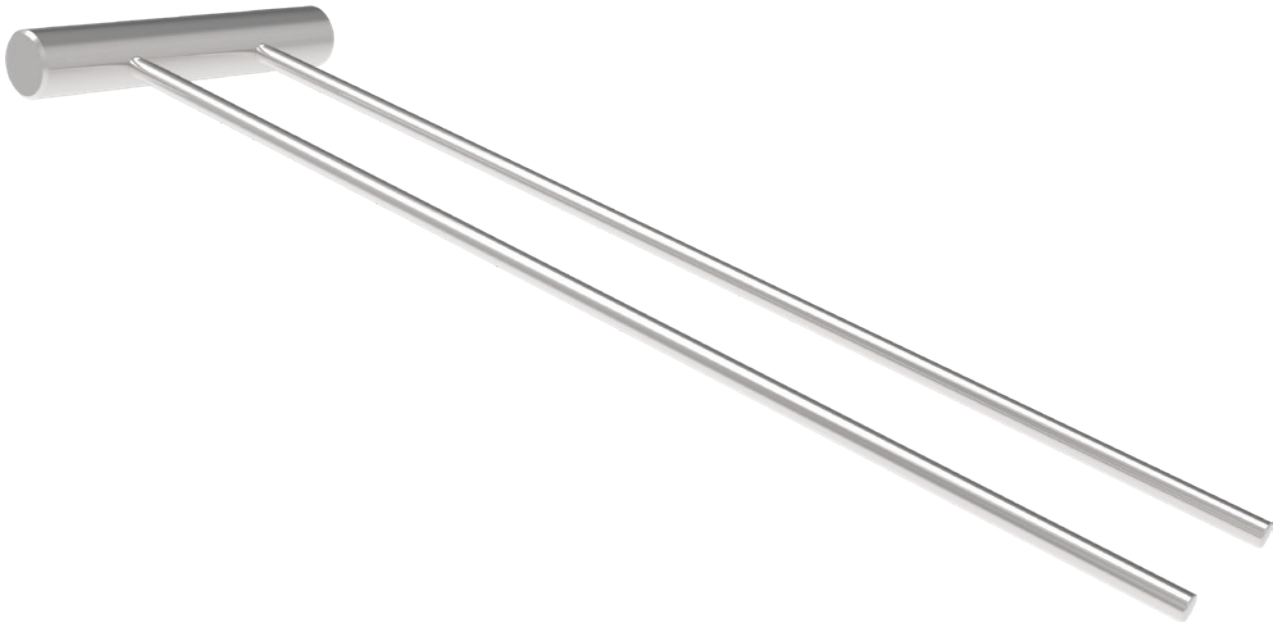
DLIF Surgery Set

- *First Generation*
- *Built-In Fixation*
- *Expandable*

DLIF Fixing Wire Pusher

Instrument Ref. Code:

BOK-LD-08

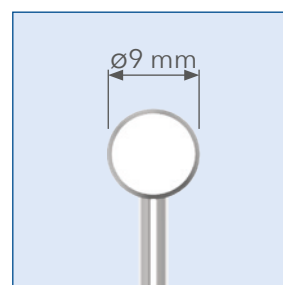
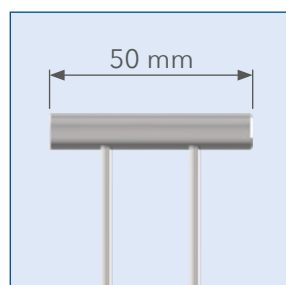


Components:

1



Dimensions:



DLIF Fixing Wire Pusher

BOK-LD-08

**Dimensional tolerance ± 2 mm



DLIF Surgery Set

- First Generation
- Built-In Fixation
- Expandable

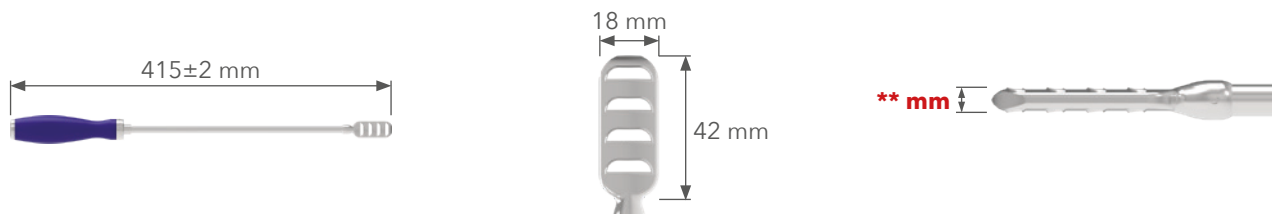
DLIF Flat Shaver

Instrument Ref. Code: **BOK-LD-10****



** Choose preferred height and use it instead of the asterisks to get the final reference.

Details



Description	Code
DLIF Flat Shaver 6mm	BOK-LD-1006
DLIF Flat Shaver 7mm	BOK-LD-1007
DLIF Flat Shaver 8mm	BOK-LD-1008
DLIF Flat Shaver 9mm	BOK-LD-1009
DLIF Flat Shaver 10mm	BOK-LD-1010
DLIF Flat Shaver 11mm	BOK-LD-1011
DLIF Flat Shaver 12mm	BOK-LD-1012
DLIF Flat Shaver 13mm	BOK-LD-1013

DLIF Surgery Set

- First Generation
- Built-In Fixation
- Expandable

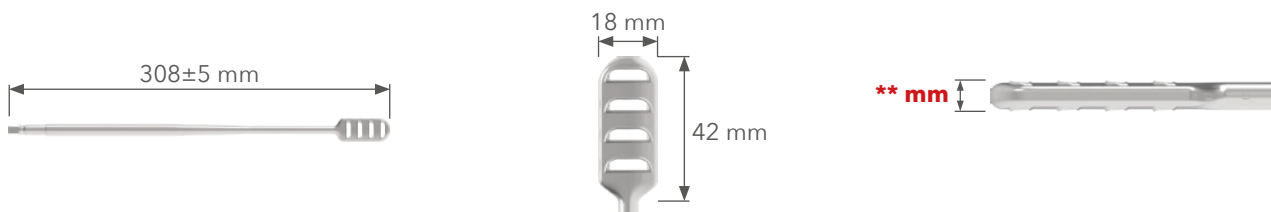
DLIF Flat Shaver
Fast Connection

Instrument Ref. Code: **BOK-LD-10**-FC**



** Choose preferred height and use it instead of the asterisks to get the final reference.

Details



Description

Code

DLIF Flat Shaver **5mm** Fast Connection

BOK-LD-1005-FC

DLIF Flat Shaver **6mm** Fast Connection

BOK-LD-1006-FC

DLIF Flat Shaver **7mm** Fast Connection

BOK-LD-1007-FC

DLIF Flat Shaver **8mm** Fast Connection

BOK-LD-1008-FC

DLIF Flat Shaver **9mm** Fast Connection

BOK-LD-1009-FC

DLIF Flat Shaver **10mm** Fast Connection

BOK-LD-1010-FC

DLIF Flat Shaver **11mm** Fast Connection

BOK-LD-1011-FC

DLIF Flat Shaver **12mm** Fast Connection

BOK-LD-1012-FC

DLIF Flat Shaver **13mm** Fast Connection

BOK-LD-1013-FC

DLIF Surgery Set

- First Generation
- Built-In Fixation
- Expandable

DLIF Parabolic Shaver

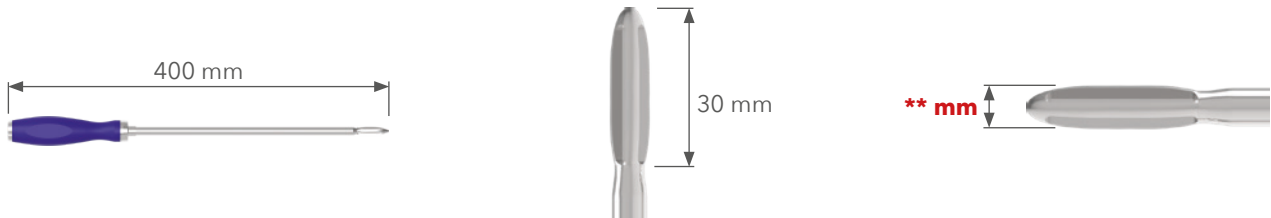
Instrument Ref. Code: **BOK-LD-11****



**Dimensional tolerance ± 2 mm

** Choose preferred height and use it instead of the asterisks to get the final reference.

Details



Description	Code
DLIF Parabolic Shaver 7mm	BOK-LD-1107
DLIF Parabolic Shaver 8mm	BOK-LD-1108
DLIF Parabolic Shaver 9mm	BOK-LD-1109
DLIF Parabolic Shaver 10mm	BOK-LD-1110
DLIF Parabolic Shaver 11mm	BOK-LD-1111
DLIF Parabolic Shaver 12mm	BOK-LD-1112
DLIF Parabolic Shaver 13mm	BOK-LD-1113

DLIF Surgery Set

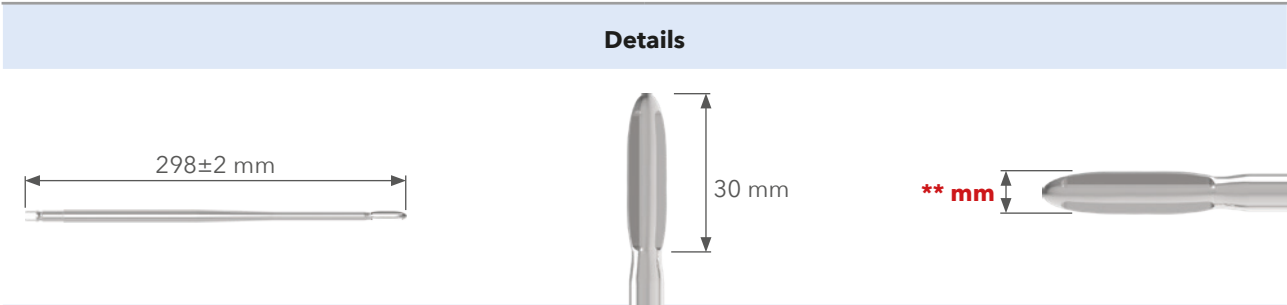
- First Generation
- Built-In Fixation
- Expandable

DLIF Parabolic Shaver
Fast Connection

Instrument Ref. Code: **BOK-LD-11**-FC**



** Choose preferred height and use it instead of the asterisks to get the final reference.



Description	Code
DLIF Parabolic Shaver 7mm Fast Connection	BOK-LD-1107-FC
DLIF Parabolic Shaver 8mm Fast Connection	BOK-LD-1108-FC
DLIF Parabolic Shaver 9mm Fast Connection	BOK-LD-1109-FC
DLIF Parabolic Shaver 10mm Fast Connection	BOK-LD-1110-FC
DLIF Parabolic Shaver 11mm Fast Connection	BOK-LD-1111-FC
DLIF Parabolic Shaver 12mm Fast Connection	BOK-LD-1112-FC
DLIF Parabolic Shaver 13mm Fast Connection	BOK-LD-1113-FC

DLIF Surgery Set

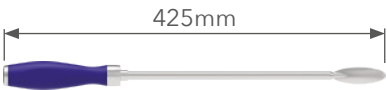
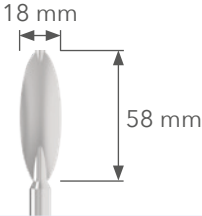
- First Generation
- Built-In Fixation
- Expandable

DLIF Implant Trial

Instrument Ref. Code: **BOK-LD-12****



**Dimensional tolerance ± 2 mm
** Choose preferred height and use it instead of the asterisks to get the final reference.

Details	
	
	
Description	Code
DLIF Implant Trial 7mm	BOK-LD-1207
DLIF Implant Trial 9mm	BOK-LD-1209
DLIF Implant Trial 11mm	BOK-LD-1211
DLIF Implant Trial 13mm	BOK-LD-1213

DLIF Surgery Set

- First Generation
- Built-In Fixation
- Expandable

DLIF Implant Trial
Fast Connection

Instrument Ref. Code: **BOK-LD-12**-FC**



** Choose preferred height and use it instead of the asterisks to get the final reference.

Details	
Description	Code
DLIF Implant Trial 7mm Fast Connection	BOK-LD-1207-FC
DLIF Implant Trial 9mm Fast Connection	BOK-LD-1209-FC
DLIF Implant Trial 11mm Fast Connection	BOK-LD-1211-FC
DLIF Implant Trial 13mm Fast Connection	BOK-LD-1213-FC

DLIF Surgery Set

- *First Generation*
- *Built-In Fixation*
- *Expandable*

DLIF Tissue Dissector

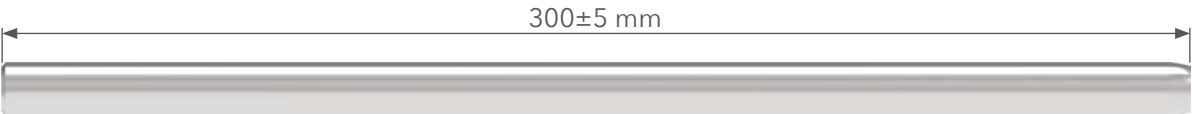
Instrument Ref. Code: **BOK-LD-13-*B**



** Choose preferred dimension and use it instead of the asterisks to get the final reference.

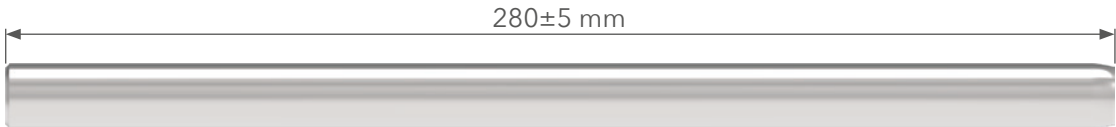
DLIF Tissue Dissector 1

BOK-LD-13-1



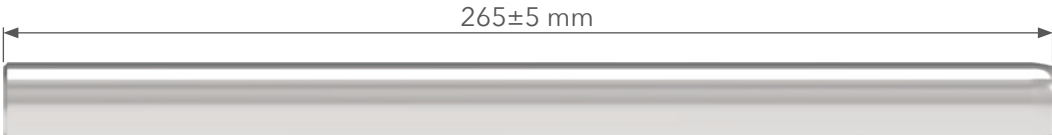
DLIF Tissue Dissector 2

BOK-LD-13-2B



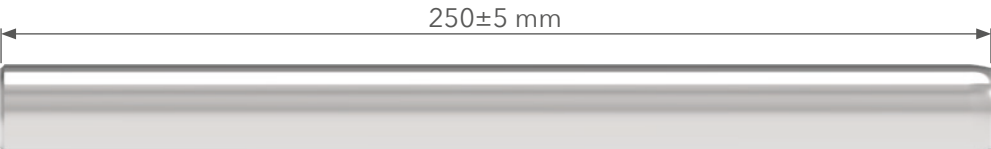
DLIF Tissue Dissector 3

BOK-LD-13-3B



DLIF Tissue Dissector 4

BOK-LD-13-4B



DLIF Surgery Set

- First Generation
- Built-In Fixation
- Expandable

DLIF Dissector First Access Guide

Instrument Ref. Code:

BOK-LD-14-*

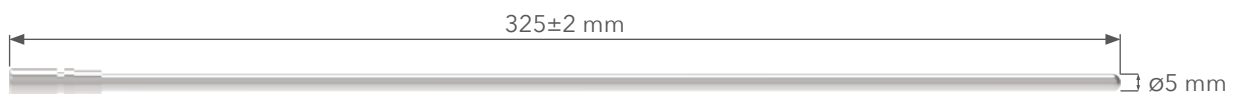


CE

** Choose preferred dimension and use it instead of the asterisks to get the final reference.

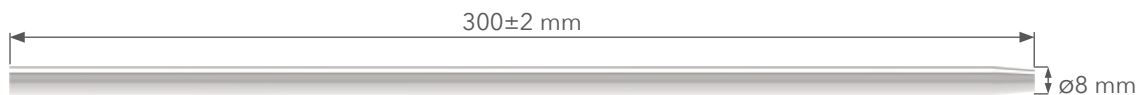
DLIF Dissector First Access Guide 1

BOK-LD-14-1



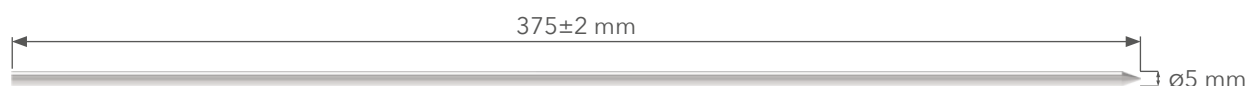
DLIF Dissector First Access Guide 2

BOK-LD-14-2



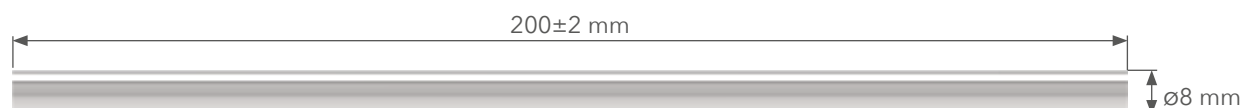
DLIF Dissector First Access Guide 3

BOK-LD-14-3



DLIF Dissector First Access Guide 4

BOK-LD-14-4



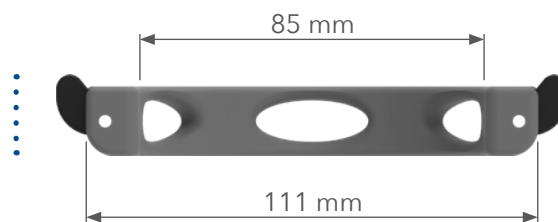
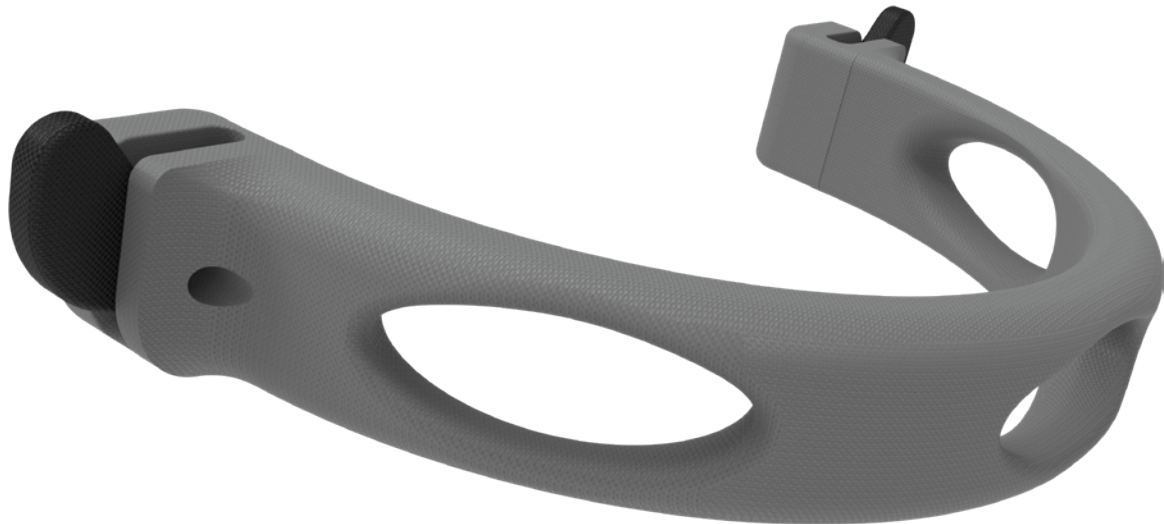
DLIF Surgery Set

- First Generation
- Built-In Fixation
- Expandable

DLIF Fixing Wire Spreader

Instrument Ref. Code:

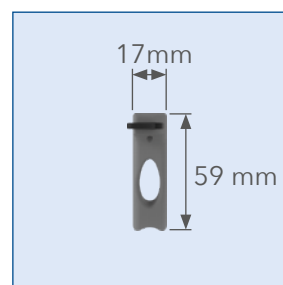
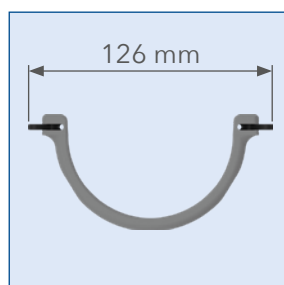
BOK-LD-15



Components:



Dimensions:



DLIF Fixing Wire Spreader

BOK-LD-15

**Dimensional tolerance ± 2 mm



DLIF Surgery Set

- First Generation
- Built-In Fixation
- Expandable

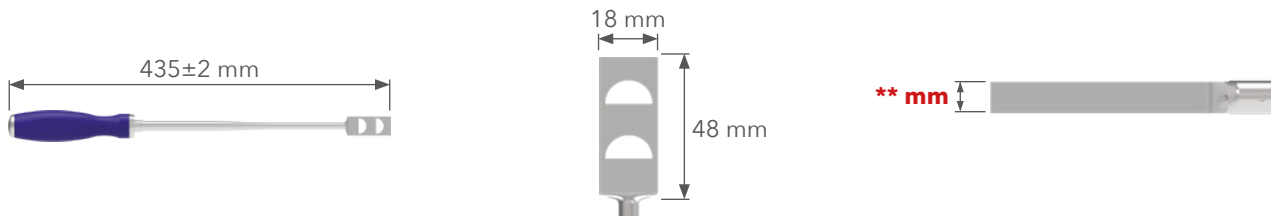
DLIF Cutting Box

Instrument Ref. Code: **BOK-LD-17****



** Choose preferred height and use it instead of the asterisks to get the final reference.

Details



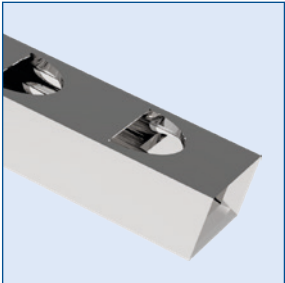
Description	Code
DLIF Cutting Box 6mm	BOK-LD-1706
DLIF Cutting Box 7mm	BOK-LD-1707
DLIF Cutting Box 8mm	BOK-LD-1708
DLIF Cutting Box 9mm	BOK-LD-1709
DLIF Cutting Box 10mm	BOK-LD-1710
DLIF Cutting Box 11mm	BOK-LD-1711
DLIF Cutting Box 12mm	BOK-LD-1712

DLIF Surgery Set

- First Generation
- Built-In Fixation
- Expandable

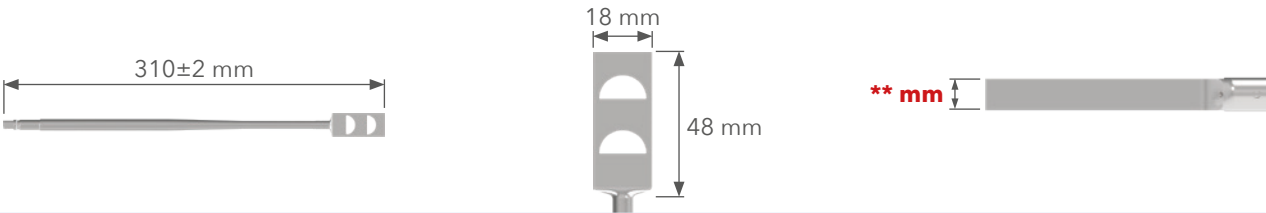
DLIF Cutting Box
Fast Connection

Instrument Ref. Code: **BOK-LD-17**-FC**



** Choose preferred height and use it instead of the asterisks to get the final reference.

Details



Description	Code
DLIF Cutting Box 6mm Fast Connection	BOK-LD-1706-FC
DLIF Cutting Box 7mm Fast Connection	BOK-LD-1707-FC
DLIF Cutting Box 8mm Fast Connection	BOK-LD-1708-FC
DLIF Cutting Box 9mm Fast Connection	BOK-LD-1709-FC
DLIF Cutting Box 10mm Fast Connection	BOK-LD-1710-FC
DLIF Cutting Box 11mm Fast Connection	BOK-LD-1711-FC
DLIF Cutting Box 12mm Fast Connection	BOK-LD-1712-FC

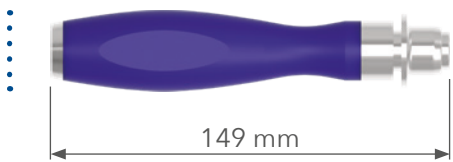
GENERAL INSTRUMENTS

- *First Generation*
- *Built-In Fixation*
- *Expandable*

Straight Handle Fast Connection

Instrument Ref. Code:

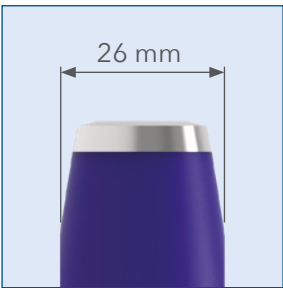
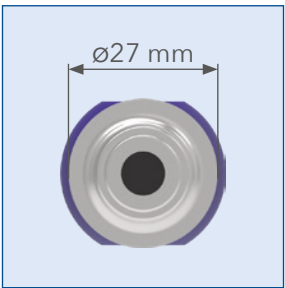
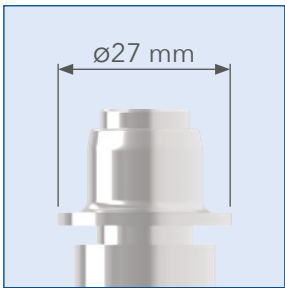
BOK-LC-55



Components:



Dimensions:



Straight Handle Fast Connection

BOK-LC-55

**Dimensional tolerance ± 2 mm



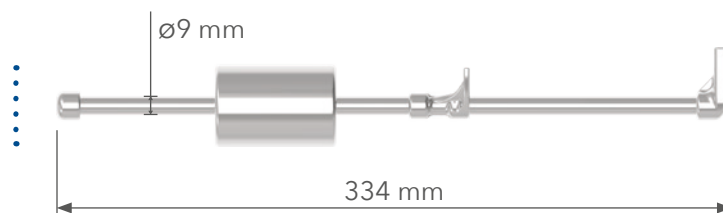
GENERAL INSTRUMENTS

- *First Generation*
- *Built-In Fixation*
- *Expandable*

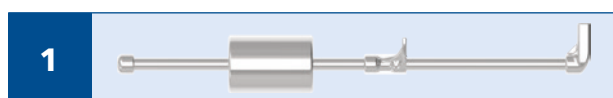
Universal Slide Hammer

Instrument Ref. Code:

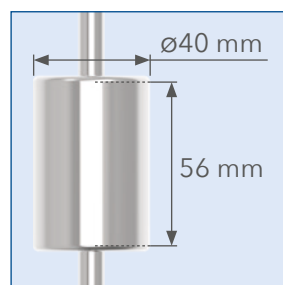
BOK-LT-80



Components:



Dimensions:



Universal Slide Hammer

BOK-LT-80

**Dimensional tolerance ± 2 mm



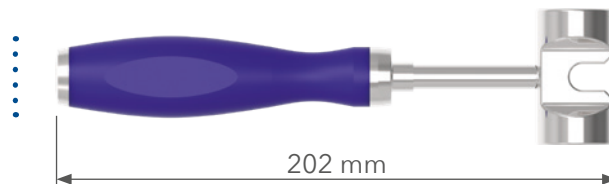
GENERAL INSTRUMENTS

- *First Generation*
- *Built-In Fixation*
- *Expandable*

Hammer 250g

Instrument Ref. Code:

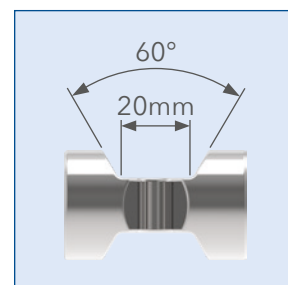
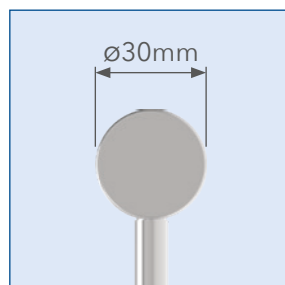
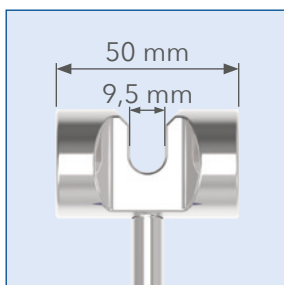
TH002



Components:



Dimensions:



Hammer 250g

TH002

****Dimensional tolerance ± 2 mm**



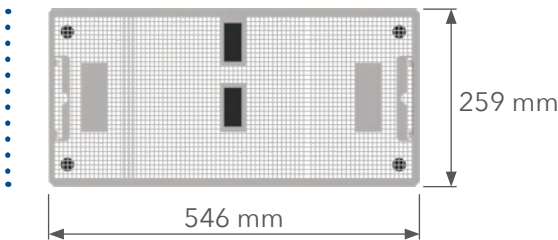
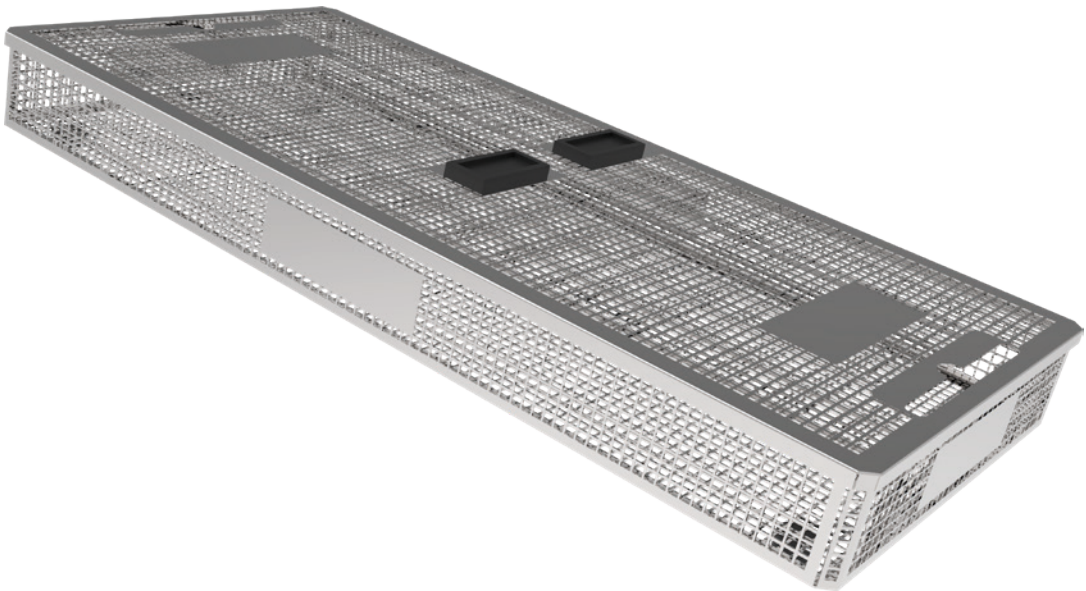
GENERAL INSTRUMENTS

- *First Generation*
- *Built-In Fixation*
- *Expandable*

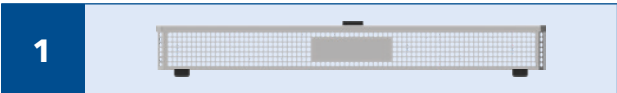
Large Tray

Instrument Ref. Code:

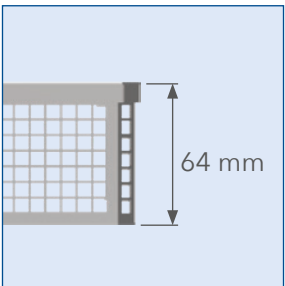
K3-721



Components:



Dimensions:

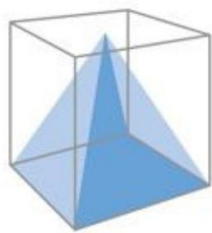


<i>Large Tray</i>
K3-721

**Dimensional tolerance ± 2 mm



Distribuidor por:



BIOSpine. S.L.

Camino de los Cinamomos 283-5

33203 - Gijón (Asturias)

985195325

info@biospine.info



Made in Italy

Tsunami Medical S.r.l.

Reg. Offices: via E. Giorgi n. 27 - 41124 Modena (MO) Italy

Production & Administrative Site: Via XXV Aprile n. 22 - 41037 Mirandola (MO) Italy

Tel. +39.0535.38397 - Fax. +39.0535.38399

www.tsunamimedical.com - info@tsunamimed.com

ST_STROMBOLI-J_REV6_20260127

UNI CEI EN ISO 13485