

TSC PLIF / TLIF Cage

Surgical Technique Manual

Orthobion
PERFORMANCE IN ORTHOPEDICS

VIEWS & SIZES

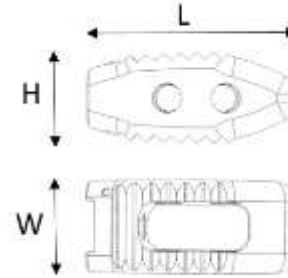


To accommodate the various anatomical ranges, the TSC PLIF and TLIF cage is available in a wide variety of heights and endplate footprints

PLIF

SMALL / MEDIUM

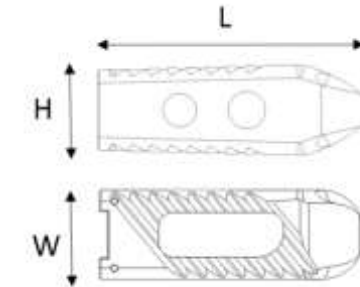
		Height (mm)							
		8	9	10	11	12	13	14	15
Length / Lordosis	25 mm / 0°	✓	✓	✓	✓	✓	✓	✓	✓
	25 mm / 4°	✗	✓	✓	✓	✓	✓	✓	✓
	25 mm / 8°	✗	✗	✓	✓	✓	✓	✓	✓
	28mm / 0°	✓	✓	✓	✓	✓	✓	✓	✓
	28 mm / 4°	✗	✓	✓	✓	✓	✓	✓	✓
	28 mm / 8°	✗	✗	✓	✓	✓	✓	✓	✓



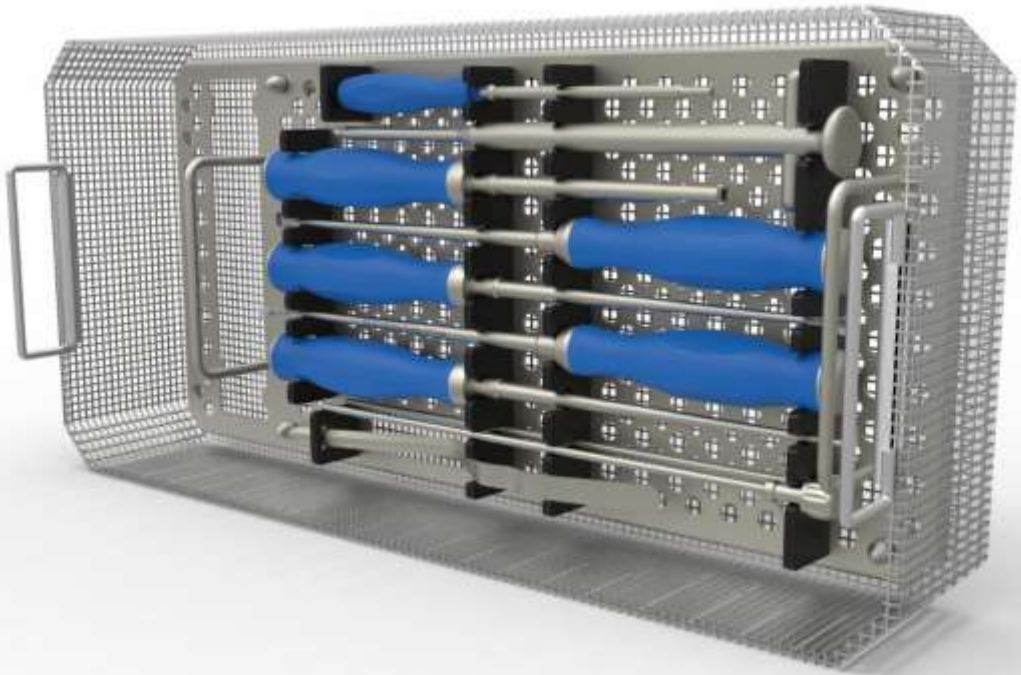
TLIF

SMALL / MEDIUM / LARGE

		Height (mm)									
		7	8	9	10	11	12	13	14	15	
Length / Lordosis	30 mm / 2°	✓	✓	✓	✓	✓	✓	✓	✓	✗	
	30 mm / 4°	✗	✓	✓	✓	✓	✓	✓	✓	✗	
	30 mm / 8°	✗	✗	✓	✓	✓	✓	✓	✓	✗	
	32mm / 2°	✓	✓	✓	✓	✓	✓	✓	✓	✗	
	32 mm / 4°	✗	✓	✓	✓	✓	✓	✓	✓	✗	
	32 mm / 8°	✗	✗	✓	✓	✓	✓	✓	✓	✗	
	36 mm / 2°	✓	✓	✓	✓	✓	✓	✓	✓	✗	
	36 mm / 4°	✗	✓	✓	✓	✓	✓	✓	✓	✗	
	36 mm / 8°	✗	✗	✓	✓	✓	✓	✓	✓	✗	
	36 mm / 12°	✗	✗	✗	✗	✗	✗	✗	✗	✗	



INSTRUMENTS





Impactor



Spoon Curette
Rectangular Curette
Ring Curette



Lumbar Cage Inserter



Inserter Thread



Shavers
T-Handle



Retractor



Hammer



Trial- Cage



Bone Packing Lock



Bone Packing
Lock Plate



Tray

CHARACTERISTICS & INDICATIONS



Introduction

Material:

The TSC PLIF / TLIF cages are made of PEEK by Invibio (Poly Ether Ether Ketone) is a radiolucent material with an elastic modulus close to bone. The TSC Cage family implants are covered with Orthobion's unique thin film titanium coating.

Characteristics:

The design and form of the TSC Cages is close to the shape of the distal disc space shape.

This design leads to :

- primary fixation due to a specific parabolic profile cranial and caudal of the endplates of the cage
- preventing possible pull out movements
- thin titanium film coating for better promotion of osseous regrowth and on growth to favorise a stable solid arthrodesis.
- preventing of withdrawal movements
- correction of intervertebral disc height
- restoring physiological lordosis

Indications:

- Degenerative Disc Disease (DDD) at levels from S1 till L2
- DDD defined by:
 - Discogenic back pain
 - Grade 1 Spondylolisthesis or retrolisthesis at the involved segments
 - Osteophyte formation on posterior vertebral endplates producing symptomatic nerve root or Spinal cord compression

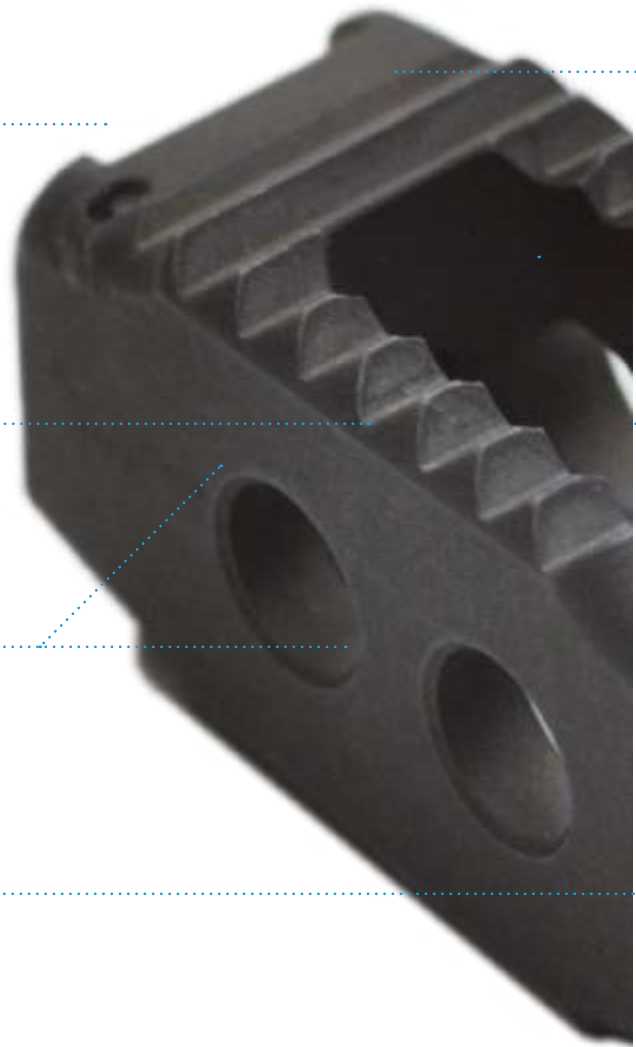
FINE GRAINED TITANIUM
Integration layer of 250 nm

ORTHOBION'S ENGINEERED SURFACE
With supporting improved bone cell anchorage and
adhesion to biomaterial surfaces

TWO LATERAL HOLES
For graft vascularization

FGOIC-TI TECHNOLOGY AS THE OUTER LAYER
For optimal cell-response and osseointegration
& reduced risk of infection

BULLET SHAPE
For easy insertion

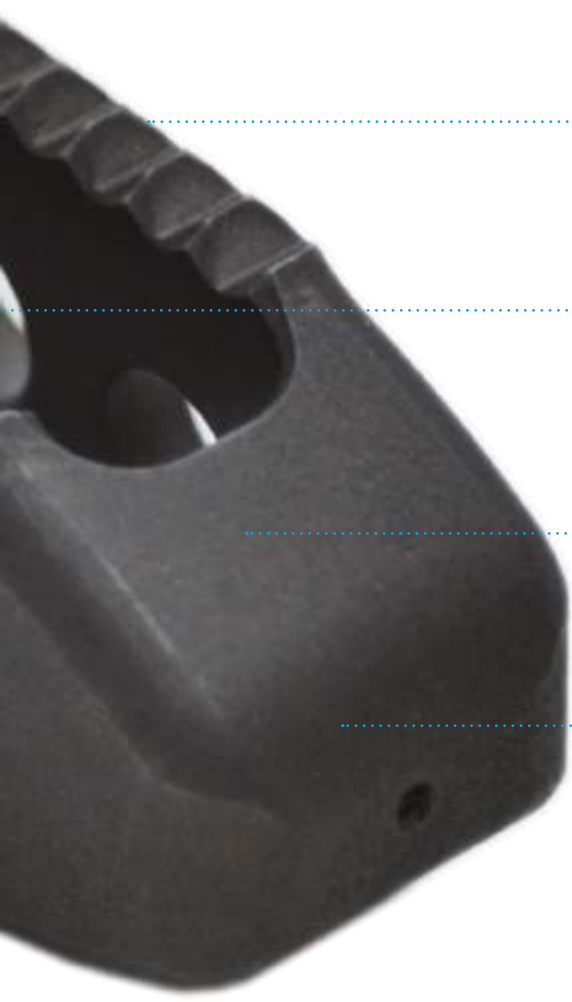


PRECAUTION FOR USE:



Implants and instruments must only be used by qualified professionals.

The placement and fitting of the TSC PLIF / TLIF cage must be systematically accompanied with a posterior fixation system.



ANTI BACK UP TEETH

LARGE WINDOW

For bone craft placement providing increased fusion area

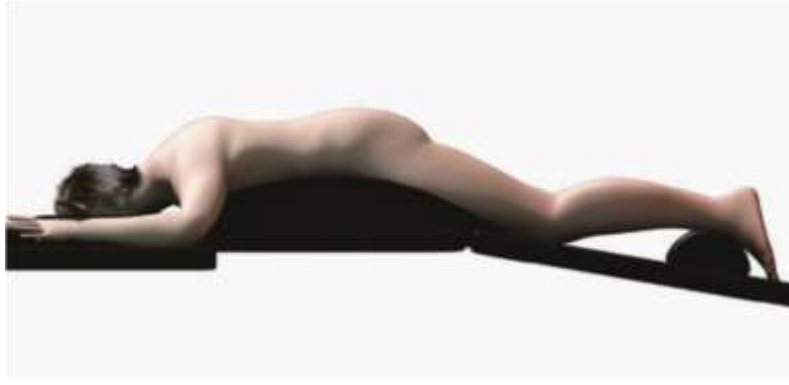
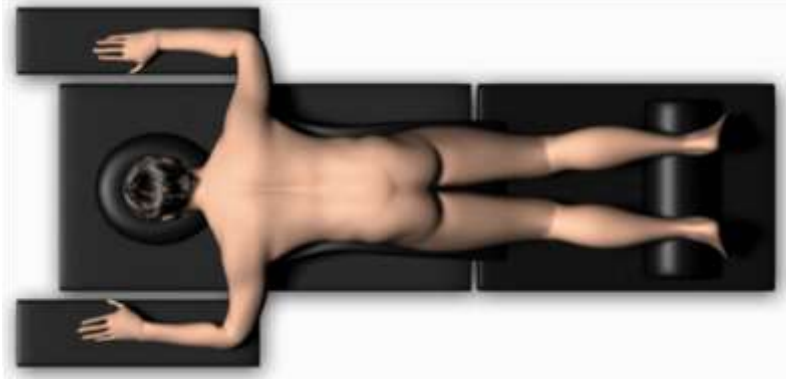
OPTIMAL GUIDANCE

With channel system

ANATOMICAL SHAPE & LORDOSIS

Allowing a more natural fit

POSITIONING OF THE PATIENT

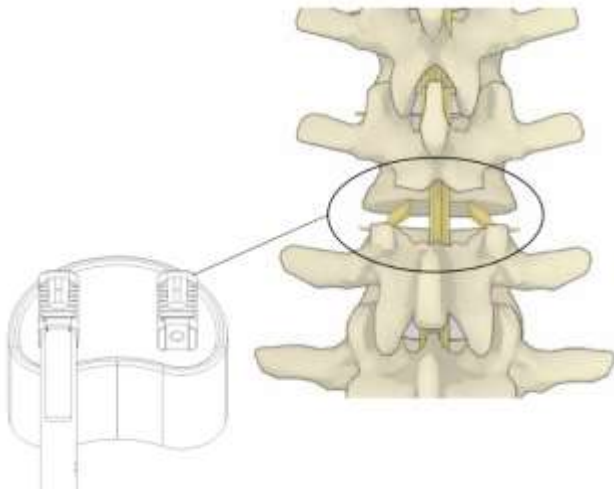


The patient is positioned in a standard ventral decubitus position in cases of posterior lumbar interbody fusion. Avoiding compression points and make sure the abdomen is free positioned to avoid pressure on the large vessels and to minimize blood loss.

The intervention is carried out by a posterior median route, X-ray shall be used to determine the correct level and to confirm identification of the affected disc and in a later stage the correct positioning of the implants.

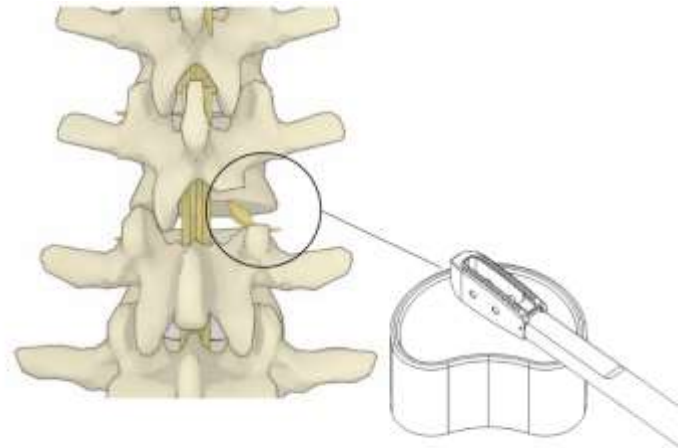
Posterior approach:

A midline incision is performed over the level to be instrumented. Expose the interlaminar window and the medial parts of the facet joint at a bilateral sides. Using a combination of surgical instruments a laminotomy, flavectomy, and /or facetectomy to provide access to the disc space. Due to the design (11 mm width and bullet shap nose) of the TSC PLIF cage a partial facetectomy is sufficient to insert the cages into the disc space. The preservation of the midline laminae can be maintained in order to respect the interlaminar and interspinous stability.



Transforaminal approach:

A midline incision is performed over the level to be instrumented. Expose the interlaminar window and the medial parts of the facet joint at unilateral side. Using a combination of surgical instruments a unilateral facetectomy is performed to provide access to the disc space. Due to the design (12 mm width and bullet shap nose) of the TSC TLIF cage can be carefully inserted into the disk space maintaining an angulation of 35-40°.



Preparation of intervertebral disc space:

The dura and upper nerve root are carefully protected using nerve root retractors (REF 99.122).

IMPORTANT: Orthobion Instruments are not designed or indicated to be in direct contact with the central nervous system or central circulation system. To retract the central nervous system please use Instruments with this indication!



The quick connect T-Handle (REF 99.005) is required for using the distractors/disc shavers (99.012-99.018) The distraction of the disc space is carried out in turning the distractor in contra clockwise direction.



Cleaning the intervertebral disc space:

This can be performed with the available curettes



Rectangular curette
REF 99.123



Spoon curette
REF 99.124



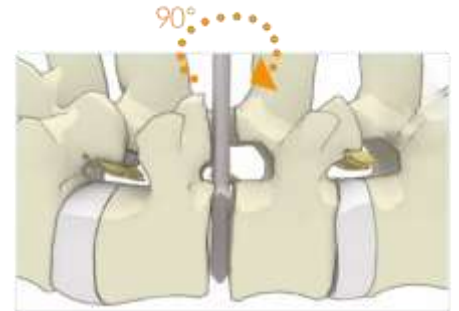
Ring curette
REF 99.125



Down push curette
REF 99.120

Preparing the endplates:

The distractor/disc shavers (REF 99.012-99.018) are used in a clockwise turning direction.



Side Note

The clockwise turning direction results in a sharp disc shaver function, (cleaning and shaving of the endplates) The contra clockwise turning direction of the distractors results in a blunt Distraction. (To create a final disc height estimate for the implant trial height)Those distractors have a double function in function of their turning direction !

(The sizing to determine the final height and length of the TSC PLIF / TLIF cage is been done with the trial cage holder REF 99.311) in combination with the trial cages (REF 99.151-99.164)



Trial cages are available in standard Lordosis 4 ° all heights and lengths 25 and 28 mm for PLIF and 30,32 and 36mm for TLIF..



Final TSC Cage impaction:

* Explanation of the final Cage Impactor

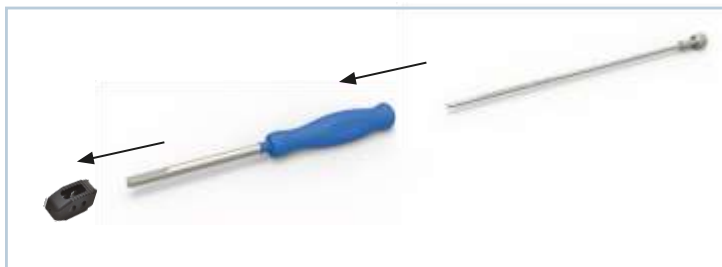


Final Lumbar cage inserter 99.004



Lumbar inserter thread REF99.025

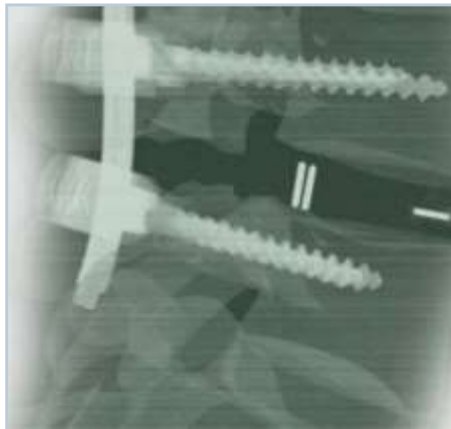
Introduce the inserter threat (REF 99.025) into the final cage inserter (REF 99.004) then screw the top of the threat inserter to assembly both instruments to one piece. Insert the final inserter into the cage by turning it into the screw thread of the cage. Final Locking of the cage has been done by screwing the inserter threat into the cage. During final tightening the 2 posterior notches of the posterior wall of the cage must align smoothly into the groove of the final cage inserter tip.



Cage locking



Cage insertion



The TSC PLIF cages have 2 radiopaque tantalum markers (posterior and the anterior side of the cage). The TSC TLIF has 3 radiopaque tantalum markers. This allows verifying and visualization of the final position of the TSC Cage with per operative image intensifier.



Orthobion
PERFORMANCE IN ORTHOPEDICS

Gottlieb - Daimler - Strasse 5
D - 78467 Konstanz
T. +49 (0) 7531 12218 30
F. +49 (0) 7531 12218 59
E. andreas.ottenschlaeger@orthobion.com

www.orthobion.com



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