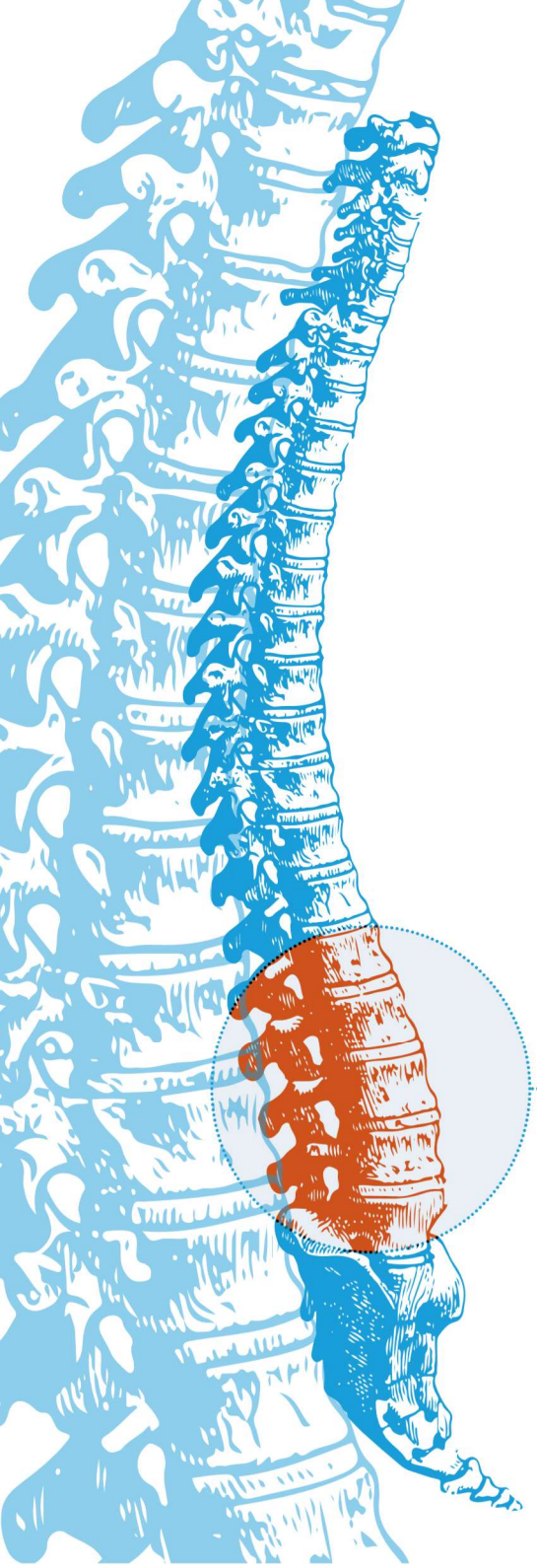


TSC TLIF Banana

Surgical Technique Manual

Orthobion
PERFORMANCE IN ORTHOPEDICS

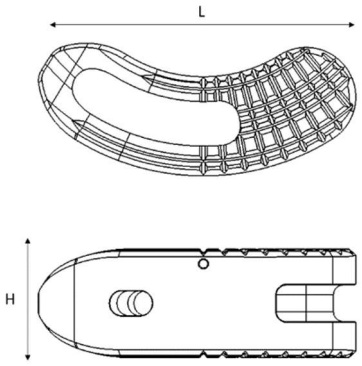
VIEWS & SIZES

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

TLIF Banana

MEDIUM / LARGE

		Height (mm)								
		7	8	9	10	11	12	13	14	15
Length / Lordosis	28 mm/ 6°	✓	✓	✓	✓	✓	✓	✓	✓	✓
	32mm / 6°	✓	✓	✓	✓	✓	✓	✓	✓	✓
	28 mm/ 12°	✓	✓	✓	✓	✓	✓	✓	✓	✓
	32mm / 12°	✓	✓	✓	✓	✓	✓	✓	✓	✓
	28 mm/ 18°	✗	✓	✓	✓	✓	✓	✓	✓	✓
	32mm / 18°	✗	✓	✓	✓	✓	✓	✓	✓	✓



INSTRUMENTS

Impactor

Spoon Curette

Ring Curette

Shavers

T-Handle

Retractor

Hammer

Introduction

Material:

The TSC PLIF / TLIF cages are made of PEEK (Poly Ether Ether Ketone, supplied by Invibio), 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 (below 1 µm).

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 thanks to a specific parabolic profile between cranial and caudal of the endplates of the cage
- prevention of possible pull-out movements
- thin titanium film coating for better promotion of osseous regrowth, leading to a stable and solid arthrodesis.
- Prevention of withdrawal movements
- correction of intervertebral disc height
- restoring of 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 and Segmental instability

FINE GRAINED TITANIUM
Integration layer of less than 1 µm

NAKED PEEK ZONE
For easy introduction of the final impactor

ORTHOBION'S ENGINEERED SURFACE
Improving bone cell anchorage and adhesion to biomaterial surfaces

LATERAL HOLES
For graft vascularization

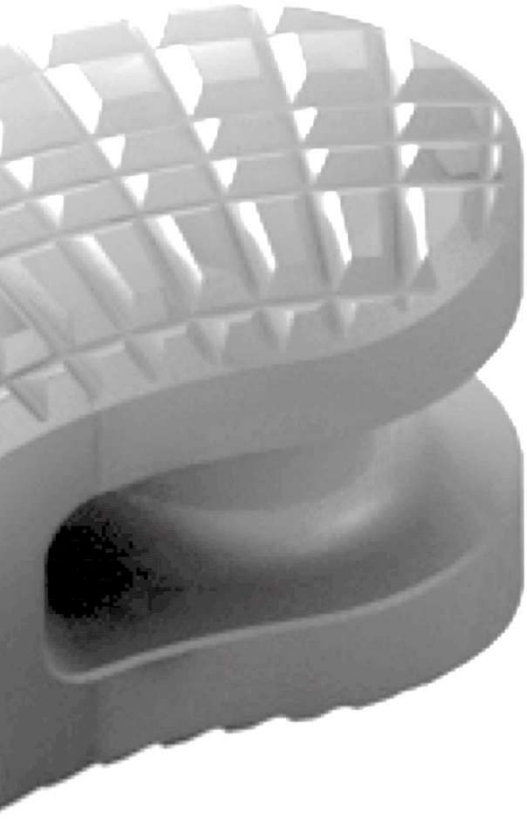
FGOIC-TI TECHNOLOGY AS THE OUTER LAYER
For optimal cell-response and osseointegration & reduced risk of infection

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.

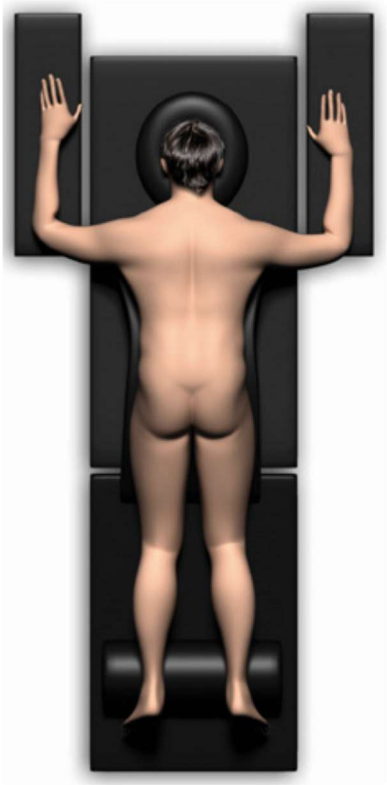


LARGE WINDOW
For bone craft placement providing increased fusion area

OPTIMAL GUIDANCE
With channel system

ANATOMICAL SHAPE & LORDOSIS
Allowing a more natural fit

POSITIONING OF THE PATIENT

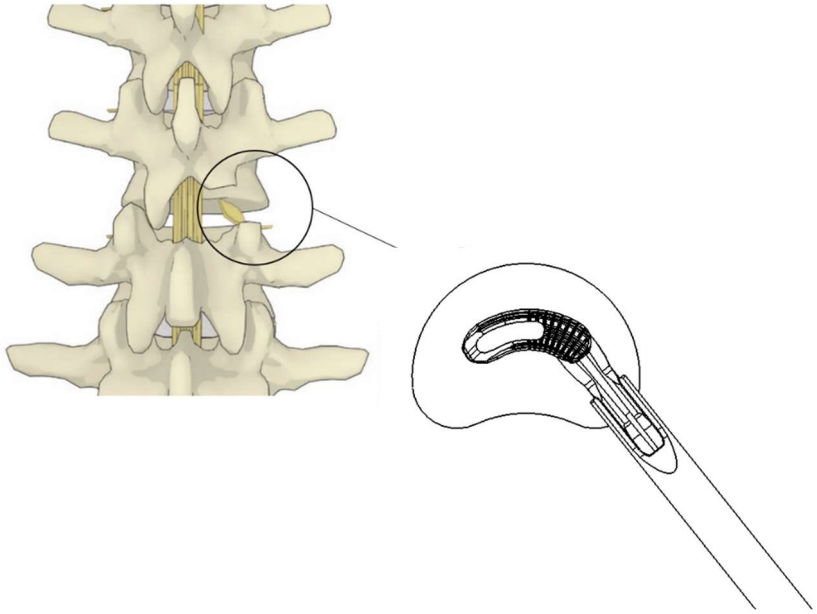


The patient is positioned in a standard ventral decubitus position in cases of posterior lumbar interbody fusion. Avoid compression points and make sure the abdomen is freely positioned to avoid pressure on the large vessels and to minimize blood loss.

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.

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 on a single side. Use combination of surgical instruments to perform a unilateral facetectomy, providing access to the disc space. Due to the design (10 mm width and bullet shap nose) of the TSC TLIF Banana 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 for 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

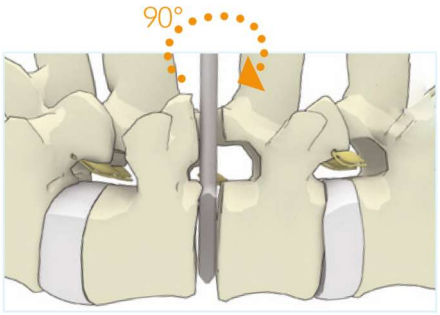
Spoon curette
REF 99.124

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

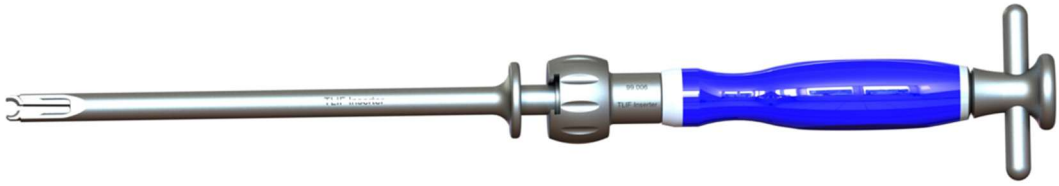
The clockwise turning direction results in a sharp disc shaver function, (cleaning and shaving of the endplates) The contra clockwise turning direction of the distractors results in a blunt distraction (to create a final disc height estimate for the implant trial height). Those distractors have a double function depending on 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 6 ° all heights and lengths 28 mm in all available heights

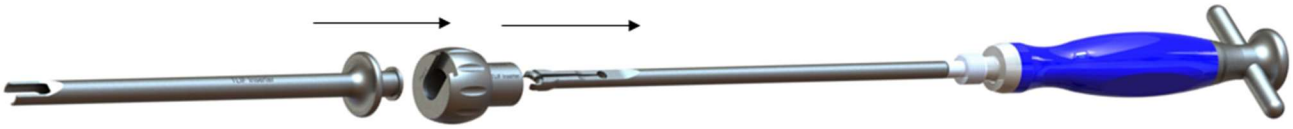
Final TSC Cage impaction:

* Explanation of the final Cage Impactor



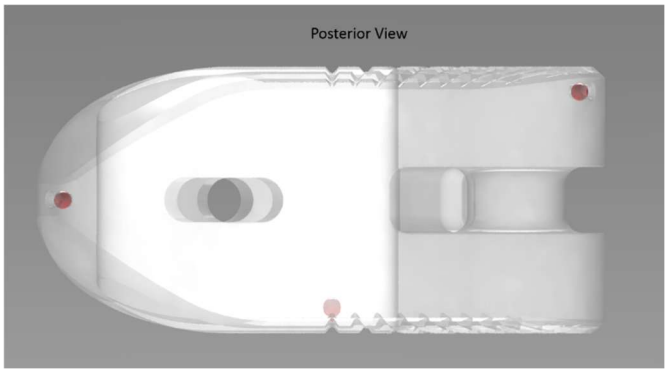
Final TLIF Banana cage inserter 99.006

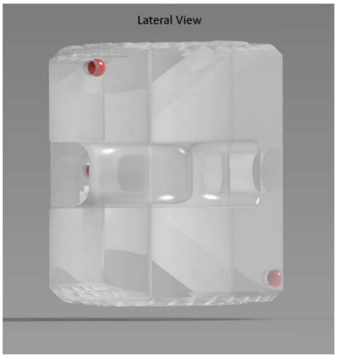
Introduce Part B into Part C thanks to a lateral movement, then insert this assembly with the main part by sliding it around. Finalization of assembly is achieved by screwing the top of the threat inserter.



Part B Part C

Cage detection	The TSC TLIF cages have 3 radiopaque titanium markers, here shown as red dots (posterior, middle and the anterior side of the cage). This allows visualization of the final position of the TSC Cage by imaging during surgery.





Cage insertion	Both Part B and Part C should be positioned as close as possible to the handle of the Cage impactor. The cage is presented according to the preferred practice for the surgeon (ranging from the overall cage being straight to the bottom being straight and the top being slightly off centered). The cage is inserted into the tweeser. The cage is then locked thanks to two steps: (1) screw the Part C until it reaches the end of the screwpad (“clicks” can be heard) and (2) slide the sleeve until at least one tip of the sleeve enter in final contact with the cage
Cage placement	Introduce the cage with the impactor into the disc space prepared, impact it until the tip of the cage reaches the expected depth. Release partially the cage by turning Part C until being in contact with the handle (unscrewing Part C). DO NOT PERFORM ANY ADDITIONAL MOVEMENT OF THE SLEEVE to avoid accidental release of the cage. Turn the impactor to generate a pronounced angle with the cage. Screw again the Part C to have a good holding of the cage. Perform a turning movement accompanied by impaction if needed to position the cage as expected. Note that, if due to encumbrance, the impactor can not penetrate enough into the disc space, a Pusher TLIF Banana (ref 99.002) can be used for final placement. In case of accidental release of the cage, the use of Pusher TLIF Banana is also recommended instead of trying to find back the cage with the TLIF Banana cage inserter.
Impactor withdrawal	Once the cage is in final position, the part C is unscrewed completely and the sleeve is pulled back. Once both operations are done, the inserter is withdrawn without any risk of unexpected movement of the cage

NOTE: Not all References are available in your Territory, please consult your distributor for more information

		Measurements			
reCreo	TSC	Length	Width	Height	Lordosis
07.200	07.100	28mm	10mm	7mm	6°
07.201	07.101	28mm	10mm	8mm	6°
07.202	07.102	28mm	10mm	9mm	6°
07.203	07.103	28mm	10mm	10mm	6°
07.204	07.104	28mm	10mm	11mm	6°
07.205	07.105	28mm	10mm	12mm	6°
07.206	07.106	28mm	10mm	13mm	6°
07.207	07.107	28mm	10mm	14mm	6°
07.208	07.108	28mm	10mm	15mm	6°
07.210	07.110	32mm	10mm	7mm	6°
07.211	07.111	32mm	10mm	8mm	6°
07.212	07.112	32mm	10mm	9mm	6°
07.213	07.113	32mm	10mm	10mm	6°
07.214	07.114	32mm	10mm	11mm	6°
07.215	07.115	32mm	10mm	12mm	6°
07.216	07.116	32mm	10mm	13mm	6°
07.217	07.117	32mm	10mm	14mm	6°
07.218	07.118	32mm	10mm	15mm	6°
07.220	07.120	28mm	10mm	7mm	12°
07.221	07.121	28mm	10mm	8mm	12°
07.222	07.122	28mm	10mm	9mm	12°
07.223	07.123	28mm	10mm	10mm	12°
07.224	07.124	28mm	10mm	11mm	12°
07.225	07.125	28mm	10mm	12mm	12°
07.226	07.126	28mm	10mm	13mm	12°
07.227	07.127	28mm	10mm	14mm	12°
07.228	07.128	28mm	10mm	15mm	12°
07.230	07.130	32mm	10mm	7mm	12°
07.231	07.131	32mm	10mm	8mm	12°
07.232	07.132	32mm	10mm	9mm	12°
07.233	07.133	32mm	10mm	10mm	12°
07.234	07.134	32mm	10mm	11mm	12°
07.235	07.135	32mm	10mm	12mm	12°
07.236	07.136	32mm	10mm	13mm	12°
07.237	07.137	32mm	10mm	14mm	12°
07.238	07.138	32mm	10mm	15mm	12°
07.241	07.141	28mm	10mm	8mm	18°
07.242	07.142	28mm	10mm	9mm	18°
07.243	07.143	28mm	10mm	10mm	18°
07.244	07.144	28mm	10mm	11mm	18°
07.245	07.145	28mm	10mm	12mm	18°
07.246	07.146	28mm	10mm	13mm	18°
07.247	07.147	28mm	10mm	14mm	18°
07.248	07.148	28mm	10mm	15mm	18°
07.251	07.151	32mm	10mm	8mm	18°
07.252	07.152	32mm	10mm	9mm	18°
07.253	07.153	32mm	10mm	10mm	18°
07.254	07.154	32mm	10mm	11mm	18°
07.255	07.155	32mm	10mm	12mm	18°
07.256	07.156	32mm	10mm	13mm	18°
07.257	07.157	32mm	10mm	14mm	18°
07.258	07.158	32mm	10mm	15mm	18°

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