HumanTech
Medical Devices

ADONIS®

UniLIF

TRANSFORAMINAL LUMBAR INTERBODY FUSION

The UniLIF technique is based on creating unilateral access to the intervertebral disc space by entering via an intervertebral foramen. Thus the UniLIF method allows a single posterior access enabling a “360°” fusion, which, amongst other benefits, offers the following advantages compared to the PLIF method:

- Unilateral facet resection
- Preservation of the lamina arch
- Preservation of the contralateral facet
- Minimal dural retraction
- Reduced risk of intradural scarring
- Revision strategy - only unilateral scarring

ADONIS®-UniLIF is an intelligent and, by virtue of the associated set of instruments, highly rational interbody device system that is a widely recognised and accepted product line offering the following benefits:

Anatomy

- Geometry is identical to the patient’s own sectional and sagittal anatomy
- Generous contact surface - reduced risk of migration

Stability

- Antegrade toothing for stable anchorage
- Contact surface for secure and permanent precision seating
- Significantly increased extraction forces

Integrity

- Large filling aperture for rapid fusion
- Internal, conically shaped geometry of the cage

holds the filling material in the cage and increases the filling volume

Modularity

Thanks to the choice of 2 materials:

- Titanium

The metal titanium has proven to be especially biocompatible and correspondingly easy to modify. It is proven that the various reactions of human cells are initiated by the surface oxides of the titanium substances , which are just a few nanometres thin.

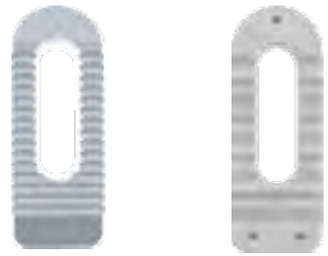
- PEEK

Our PEEK material has been tested in accordance with ISO 10993, has been classified in accordance with US P-VI, and FDA Device and Drug Master Files are available.

ADONIS® -UniLIF

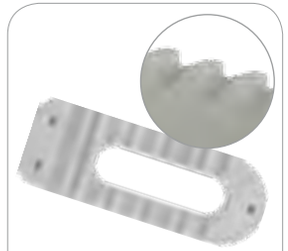
Interbody Device System

Product-specific advantages



Modularity

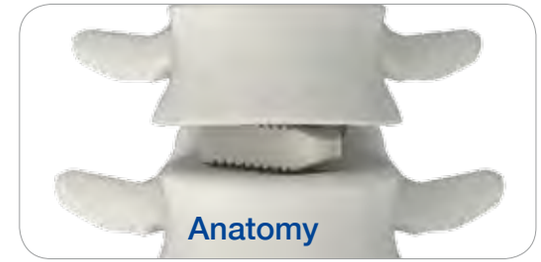
Integrity



Stability

1. Modularity
2. Integrity
3. Stability
4. Anatomy

Modularity



Anatomy

ADONIS®-UniLIF Classic

ADONIS® Classic is a solid titanium interbody device system that is a widely recognised and accepted product line for thoracolumbar indications.

Coupled with a reliable and simple set of instruments, ADONIS® Classic becomes the solution for thoracolumbar, intercorporal fusions.

The latest findings are used in the manufacturing of titanium implant materials with tailor-made surface properties. We exclusively use titanium Ti 6Al-4V ELI (in accordance with DIN ISO 5832-3).

TITAN

ADONIS®-UniLIF Avantgarde

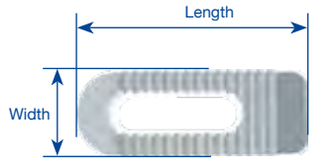
ADONIS® Avantgarde is an implant made from biocompatible PEEK-Optima® for the thoracolumbar interbody fusion used to treat degenerative disc diseases and instabilities.

This radio transparent material enables the rapid and straightforward assessment of bone structure and the fusion process. X-ray markers serve to verify positioning.
A mechanical stability of 3.6 GPa allows for optimal load transmission between the implant material and natural bone. This stimulates the bone healing processes.
Our material, PEEK, has been tested in accordance with ISO 10993, has been classified in accordance with US P-VI, and the relevant FDA Device and Drug Master Files are available.

Thanks to its material properties and its approval certificates, PEEK is predestined for use as an implant material.

PEEK

Classic
Titanium



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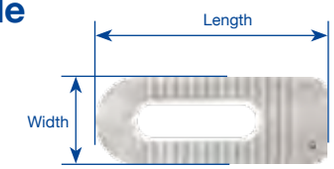
2001053007	Adonis Uni-LIF Ti	30	11	07	0°
2001053009	Adonis Uni-LIF Ti	30	11	09	0°
2001053011	Adonis Uni-LIF Ti	30	11	11	0°
2001053013	Adonis Uni-LIF Ti	30	11	13	0°
2001053015	Adonis Uni-LIF Ti	30	11	15	0°

Avantgarde
PEEK



Art.No.	Description	Length	Width	Height	Angle
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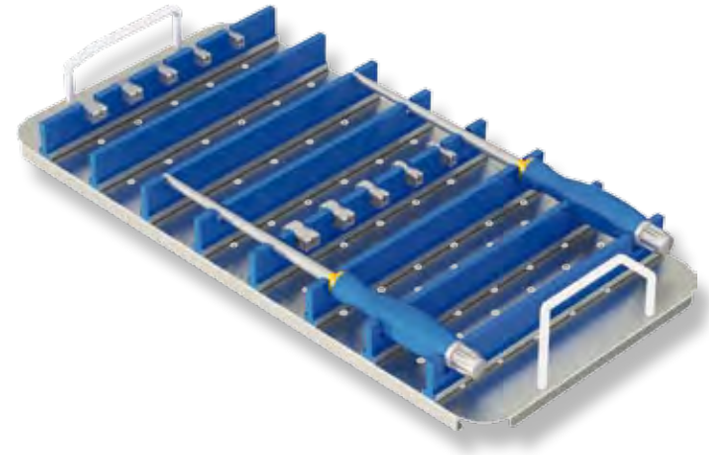
2001043011	Adonis Uni-LIF PEEK	30	11	11	0°
2001043013	Adonis Uni-LIF PEEK	30	11	13	0°
2001043015	Adonis Uni-LIF PEEK	30	11	15	0°

Instruments
for ADONIS©-UniLIF

Art.No.	Description	Picture
1701013007 1701013009 1701013011 1701013013 1701013015	Uni-LIF Trial 30x11x07mm 0° Uni-LIF Trial 30x11x09mm 0° Uni-LIF Trial 30x11x11mm 0° Uni-LIF Trial 30x11x13mm 0° Uni-LIF Trial 30x11x15mm 0°	
1701010000	PLIF-Inserter	
1701010600	Extractor Handle	



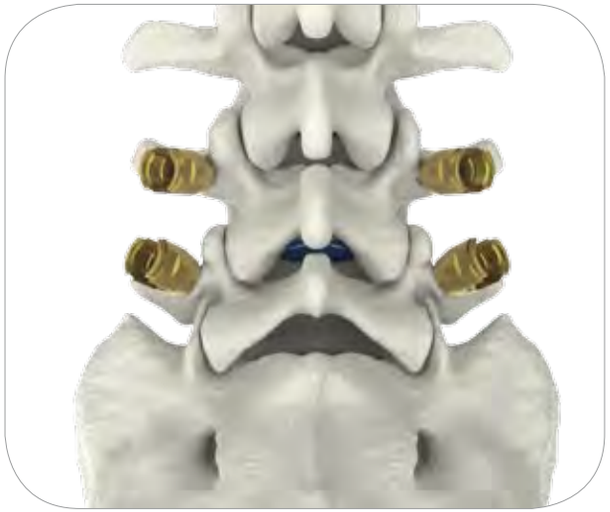


Fig. 1

Inserting the pedicle screws

Identify the insertion points for the pedicle screws. The optimal insertion point is at the intersection of the transverse process and pars interarticularis. The pedicle screws are inserted and their position is then checked via x-ray.
Further details about the insertion of the pedicle screws can be found in the respective surgery technique of the dorsal system used.

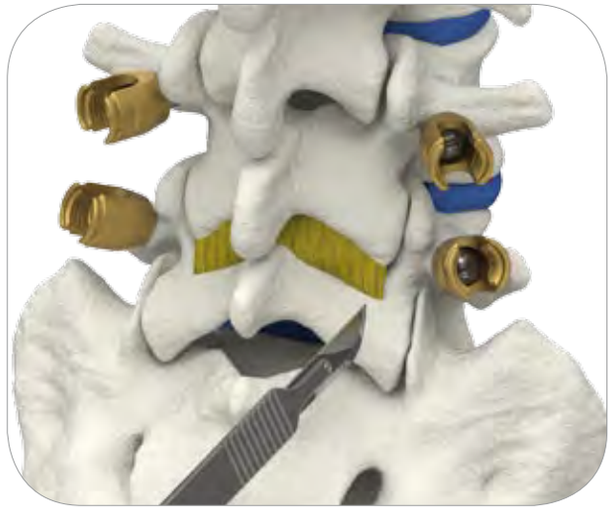


Fig. 2

Resection of the ligamentum flavum

In order to gain transforaminal access to the disc space, a unilateral facetectomy is performed. Frequently, the side chosen for the approach is determined by the location of the pathology or the presence of scar tissue.
Resect the ligamentum flavum from the anterior surface of the lamina with a curette. (Fig. 2).

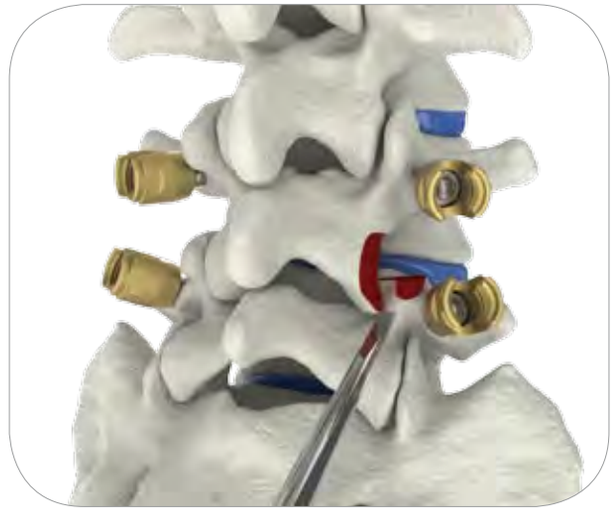


Fig. 3

Preparing the opening for the transforaminal access

Resect the inferior articular process (Fig. 3) with a Straight Osteotome or a Kerrison Punch. The capsular part of the ligamentum flavum is now visible and can be resected.
Resect the superior articular process with a Straight Osteotome or a Kerrison Punch to expose the intervertebral foramen.

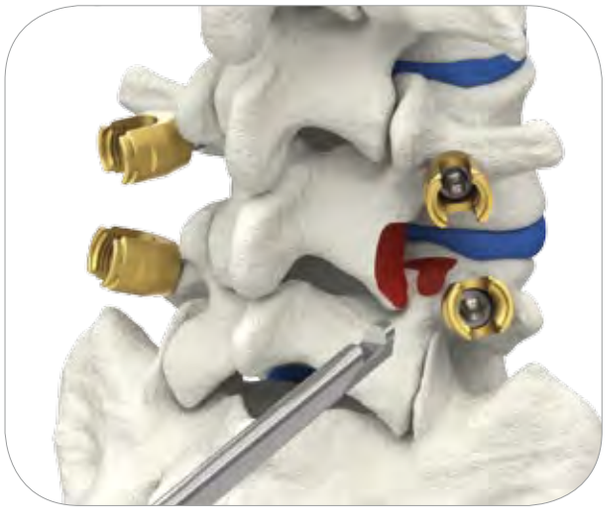


Fig. 4

Final access to the intervertebral disc

The superior articular process is resected to expose the intervertebral foramen (Fig. 4).
Prepare the pedicle by removing the overhanging superior articular process with a Kerrison Punch to gain final access to the disc. Complete meticulous haemostasis must be ensured at the entry point of the disc space. Care should primarily be taken to observe the exiting nerve root and the lateral part of the dural sac. A Dissector or Nerve Root Retractor may be used to ensure the protection of these tructures at every step of the procedure.
Perform a box annulotomy to create a window to the disc space.

Fig. 5

Initial Distraction

Initial distraction of the disc space is necessary in order to access the disc for a thorough discectomy.

Distraction can be achieved using one of the following methods:
- Distraction via pedicle screws
- Distraction via the spinous process
- Distraction via dilator

A starter dilator is inserted horizontally into a collapsed disc space and then rotated by 90° to achieve distraction.

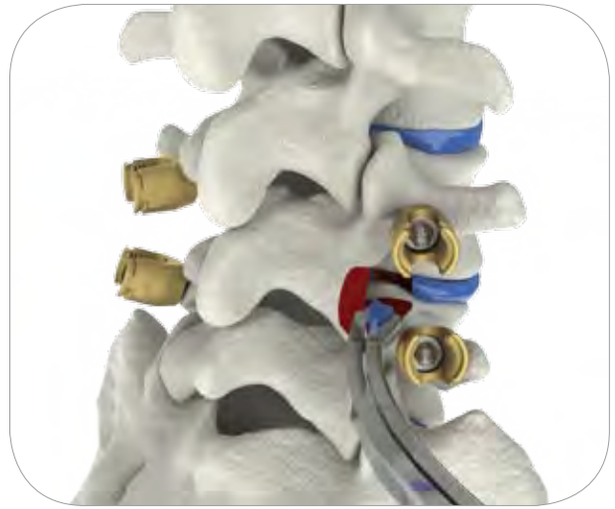


Fig. 6

Disc Removal

A thorough discectomy is performed using a combination of curettes, chisels and Luer cannulas. Care should be taken to maintain the integrity of the endplates. A chisel or rasp may be used to prepare the endplates. A variety of straight or angled Luer or punches are used to facilitate the complete removal of all loose disc material.
If necessary, a straight Osteotome can be used to resect the posterior lip of the superior and inferior endplates to facilitate insertion of the cage. It is important that a flat parallel surface is achieved in preparation for the insertion of the interbody device.

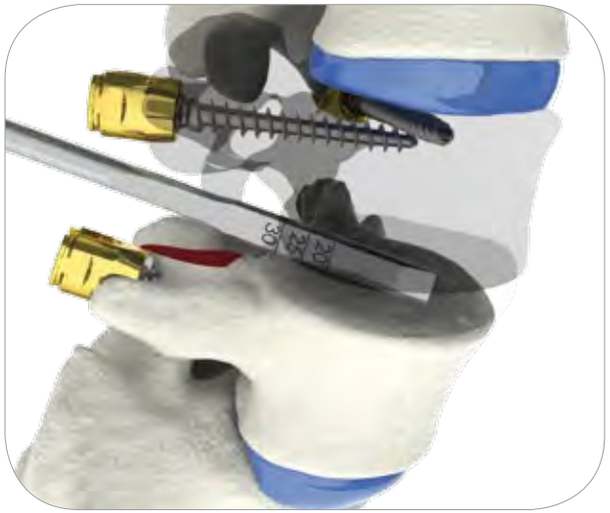


Fig. 7

Further Disc Space Distraction

Further distraction of the disc space prior to cage insertion can be achieved by utilising the range of distractors in the cleaned out and prepared disc space. The distractors are used sequentially until the appropriate annular tension has been achieved.
In order to maintain this distraction, the dorsal instruments are locked on the contralateral side (Fig. 7).

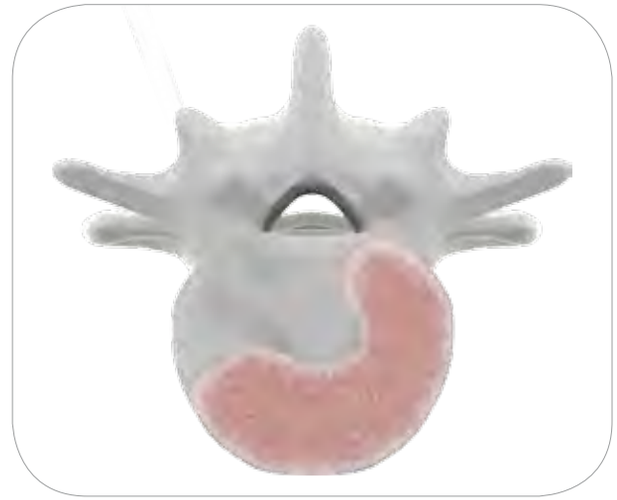


Fig. 8

Placement of Bone Graft

In order to achieve a solid interbody fusion, the disc space should be filled with as much bone graft material as possible. The anterior third and the contralateral side of the disc space is filled with bone graft material.

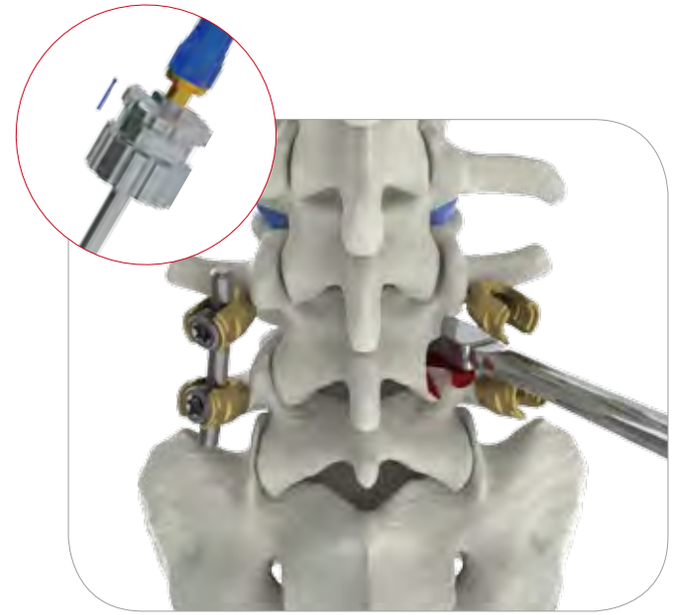


Fig. 9

Trial Cage

A trial cage can be used prior to insertion of the implant to verify the cage placement and required disc height.
The trial cage can be extracted with the “extractor handle”.

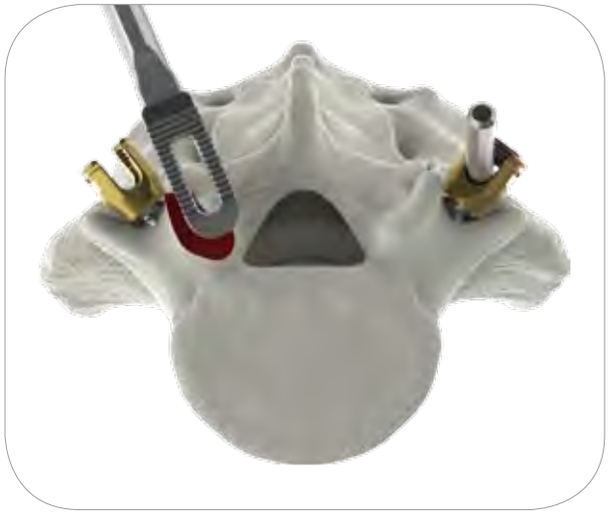


Fig. 10

Insertion of the Cage

The implant is loaded onto the inserter. Care should be taken not to overtighten the inserter when loading the cage.
Once the implant is loaded onto the inserter, the cage is packed with bone graft material.

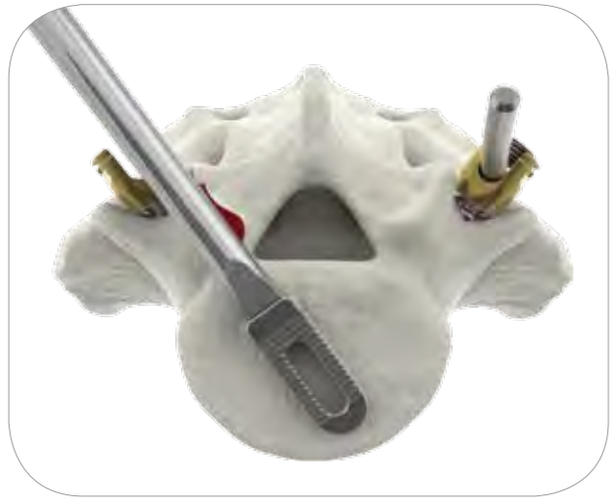


Fig. 11

Cage Manipulation

An X-ray then serves to verify the final cage placement. The placement of X-ray markers enables the exact position of the cage in the sagittal, coronal and axial planes to be identified.

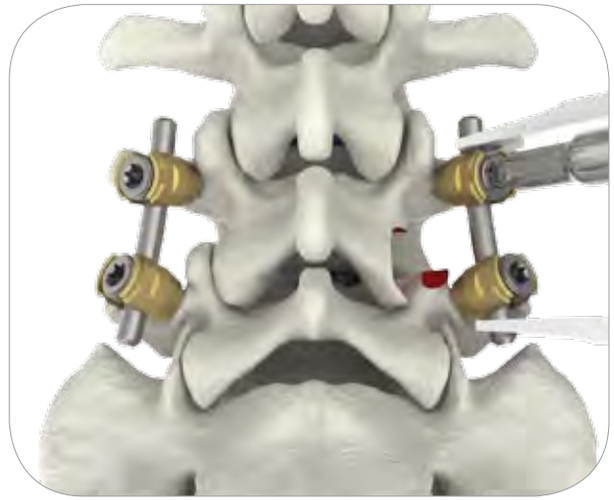


Fig. 12

Final Compression

The final compression must be implemented using the dorsal instruments.

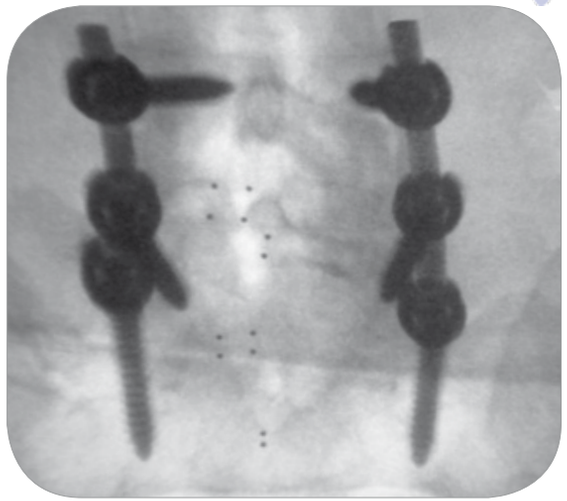


Fig. 13

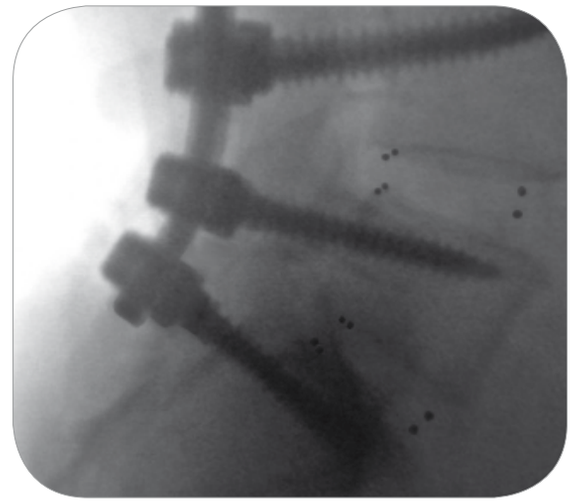


Fig. 14

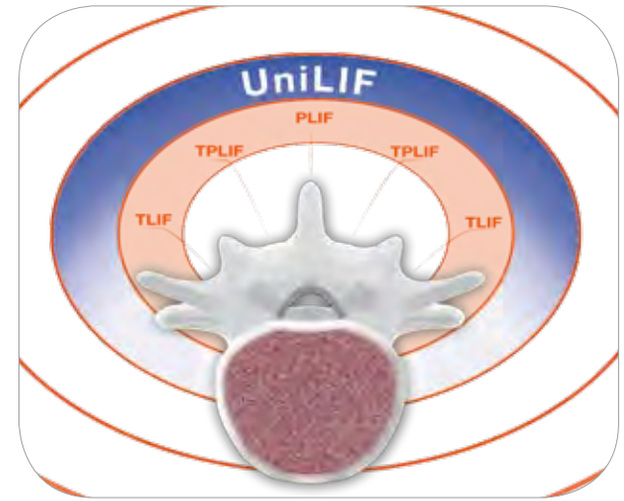


Fig. 15

Final Construction/X-rays

Final check of the construction taking X-ray control images of two planes.
Cleaning the surgical area and wound closure.

Application Area

ADONIS®-UniLIF implants are indicated for use in unilateral surgical procedures. In such surgery, an ADONIS®-UniLIF implant can be inserted into the prepared disc space, either by way of the PLIF method or the TLIF method, or alternatively in the whole area in-between. This is possible for open surgery or minimally invasive methods.

Fig. 16

AP-View
centrical placed UniLIF-Cage

Sagittal View
centrical placed UniLIF-Cage

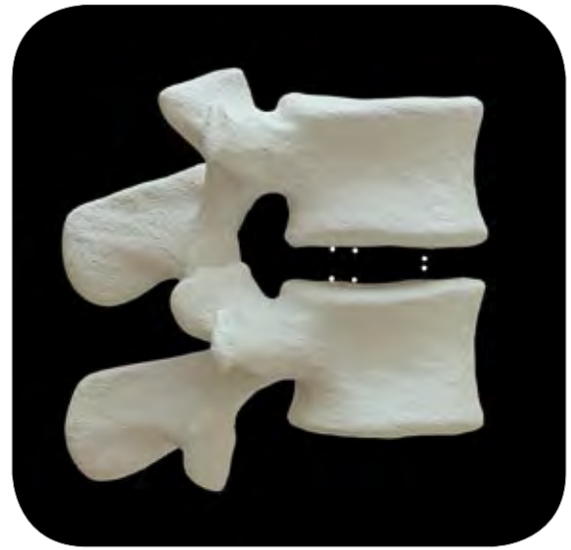
Positioning of Markers

To ensure the correct positioning of the cage, the cage must be brought into a central position once it has been inserted into the intervertebral disc space.
The six tantalum beads in the UniLIF PEEK cage shown are used for the fluoroscopic representation of the implant's position. It makes it possible to assess the exact position of the cage based on the X-rays.

In the UniLIF PEEKimplants, two markers are located medially at the anterior implant end and four are placed to form a rectangle at the posterior implant end. The four rectangular markers show the outer dimensions of the cage.

In UniLIF PEEK implants, the four posterior and two anterior markers are visible on the X-ray in an implant placed centrally within the disc space.

AP-View x-ray
centrical placed UniLIF-Cage



Sagittal View x-ray
centrical placed UniLIF-Cage

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