Optional Instruments

Product Code	Description
8703031	Trial Spacer, 0°, 10×28×8
8703033	Trial Spacer, 0°, 10×28×10
8703034	Trial Spacer, 0°, 10×28×11
8703035	Trial Spacer, 0°, 10×28×12
8703036	Trial Spacer, 0°, 10×28×13
8703037	Trial Spacer, 0°, 10×28×14
8703038	Trial Spacer, 0°, 10×28×15
8703041	Trial Spacer, 0°, 10×32×8
8703043	Trial Spacer, 0°, 10×32×10
8703044	Trial Spacer, 0°, 10×32×11
8703045	Trial Spacer, 0°, 10×32×12
8703046	Trial Spacer, 0°, 10×32×13
8703047	Trial Spacer, 0°, 10×32×14
8703048	Trial Spacer, 0°, 10×32×15
8703050	Trial Spacer, 6°, 10×28×7
8703051	Trial Spacer, 6°, 10×28×8
8703057	Trial Spacer, 6°, 10×28×14
8703330	Trial Spacer, 6°, 10×32×7
8703331	Trial Spacer, 6°, 10×32×8
8703337	Trial Spacer, 6°, 10×32×14
8703121	Shaver, 8 mm
8703127	Shaver, 14 mm

SHANGHAI
Room 505, 768 Xie Tu Rd. Huangpu District
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T (8621) 6386 1008 / 6386 1009
F (8621) 6386 1017

WUXI
9-8 Jingrui Rd, Industrial Concentration District, Zhangjing, Xibei Town,
Xishan District, Wuxi, Jiangsu Province, China 214194
T (86510) 8379 7697 / 8379 1620
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BoTEC®

Acorn TLIF PEEK Cage System Surgical Technique

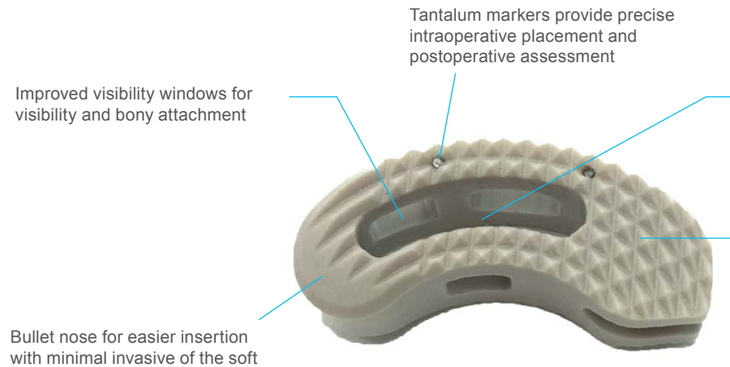
... Inspired for Life

Table of Contents

Product Introduction

The ACORN PEEK Cage Systems restore the disc height and provide the stability during and after the bone fusion period. The three dimensional reconstruction helps to improve the load sharing of the anterior and posterior spinal column and restore anatomic kyphosis/lordosis. The systems also provide varying shape and size configurations to match different anatomy.

ACORN TLIF PEEK Cage



Designed for posterior interbody fusion procedure:

- Footprint: 10x28mm, 10x32mm
- Lordosis: 0°& 6°
- Height: 7-15mm (1 mm increment)

Footprint / Lordotic Angulation	0°	6°
10x28	7-15mm	9-15mm
10x32	7-15mm	9-15mm

Surgical Technique

INDICATIONS AND CONTRAINDICATIONS

INTENDED USE

The ACORN TLIF Cage is intended to replace lumbar intervertebral discs and to fuse the adjacent vertebral bodies together at vertebral levels L1–S1. The implant is designed for a transforaminal approach.

INDICATIONS

Indications are lumbar and lubosacral pathologies in which segmental spondylodesis is indicated, for example:

– Degenerative disc diseases and spinal instabilities

– Revision procedures for post-discectomy syndrome

– Pseudarthrosis or failed spondylodesis

– Degenerative spondylolisthesis

– Isthmic spondylolisthesis

CONTRAINDICATIONS
– Vertebral body fractures
– Spinal tumours
– Major spinal instabilities
– Primary spinal deformities
– Osteoporosis

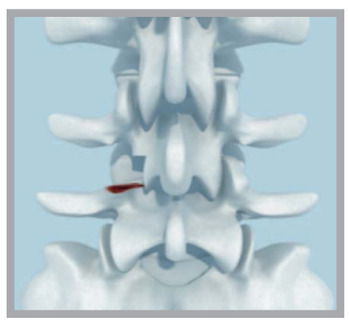
1. PATIENT POSITIONING

Position the patient in a restored transforaminal physiological lordosis.

2. APPROACH

1) Make a standard open incision, retract the muscle layer to view the desired segment. Distract the segment if desired. Position the lamina spreader for the implant at the base of the spinous processes. Distract carefully until required distraction is achieved. Distraction opens the posterior disc space and promotes exposure both for decompression and delivery of the implant.

2) Prepare a window for the transforaminal approach using the osteotome to remove the inferior facet of the cranial vertebra and the superior facet of the caudal vertebra. With the punch, additional bone or osteophytes can be removed.



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ACORN TLIF PEEK Cage System Surgical Technique

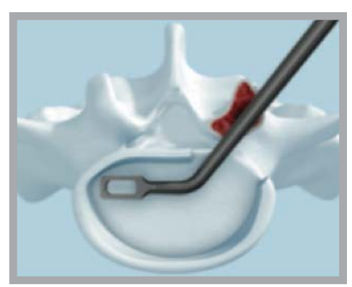
3. DISCECTOMY

Access the foramen and remove disc material through an incision in the annulus fibrosus, using any of the following instruments: box and ring curettes, rongeurs as well as disc shavers.

The annulus must be preserved to provide additional support for the implant.

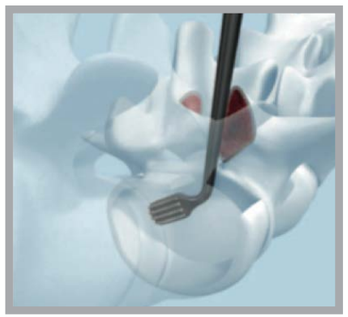
The shavers can initially be used to ream out disc material or for final removal of the disc material and cartilaginous tissue.

For removal of the tissue in the far lateral disc space, use the left /right angled curettes and the curved rongeur.

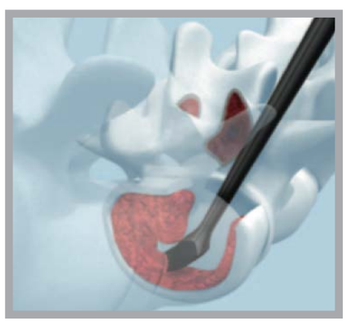


4. DISC SPACE PREPARATION

1) Prepare endplates: When the discectomy is completed, use the rasp to remove the superficial cartilaginous layers of the endplates and to expose the bleeding bone.



2) Pack disc space: Before the cage is implanted, the anterior and far lateral disc space should be filled with bone graft or bone graft substitute.



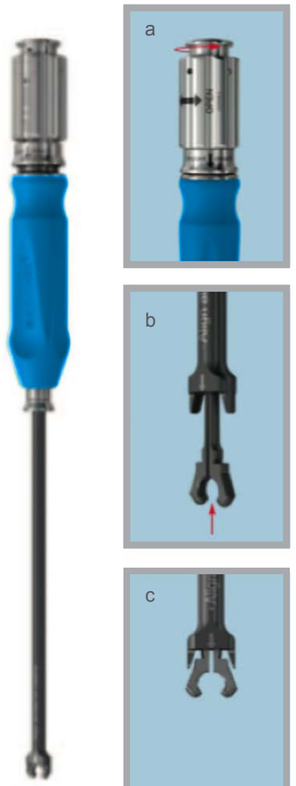
5. TRIAL FOR IMPLANT SIZE

1) Assemble applicator

The applicator must be assembled before insertion of the trial.

Attach the applicator knob to the distal end of the applicator outer shaft by turning the knob counterclockwise until it stops (a).

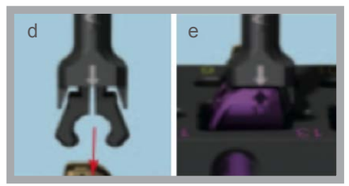
Insert the applicator inner shaft into the applicator outer shaft making sure that the arrow on the outer shaft is aligned with the distal opening of the inner shaft (b). The applicator inner shaft should now be trapped inside the outer shaft (c).



2) Connect trial implant to applicator

Connect an appropriately sized trial implant to applicator. Pull the security ring down and simultaneously turn the knob at the distal end of the applicator counterclockwise. The applicator jaws open (d). Place the jaws over the proximal end of the trial implant making sure to align the arrows on the end of the applicator with those on the trial implant (e).

Turn the applicator knob clockwise to close the jaws. During this closing procedure the security ring moves upwards, so that the black color band is visible (f). Continue to turn the knob until it is tightened (e).

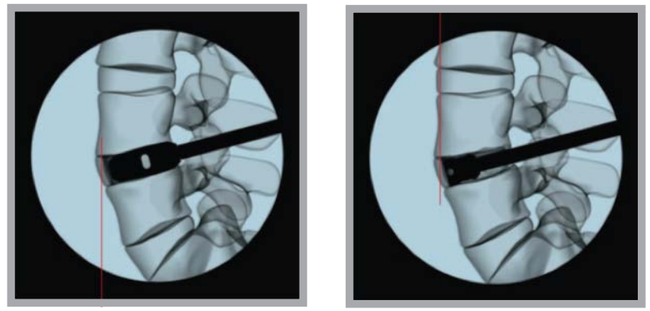


3) Insert trial implant

Recheck the applicator/trial implant connection. Insert the trial implant into the disc space, ensuring that the orientation of the trial implant is correct. The trial implant tip should be orientated medial. Controlled and light hammering on the applicator may be required to advance the trial implant into the intervertebral disc space.

Use fluoroscopy to confirm position and fit of the trial implant.

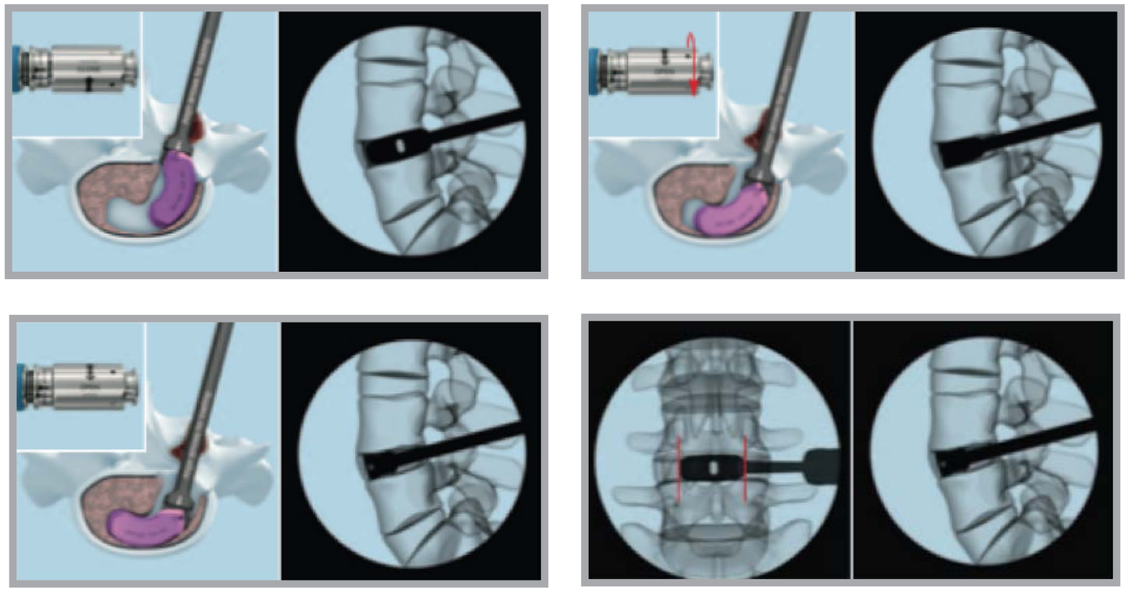
The tip should be positioned near the anterior edge of the adjacent vertebral bodies.



4) Position trial implant

Turn applicator knob counterclockwise until it stops. Controlled and light hammering on the applicator may be required to pivot the trial implant into final position.

Use fluoroscopy during the pivoting procedure and confirm fit and position of the trial implant. Each trial implant has a medial/lateral and an anterior/posterior opening for position control. If the trial implant appears too small or too tight, try the next larger or smaller size height until the most secure fit is achieved.



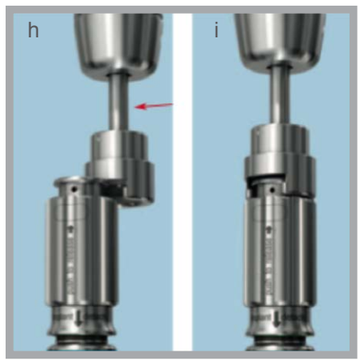
5) Remove trial implant

Slide the slide hammer onto the end of the applicator knob with quick coupling (h). While holding the handle with one hand, apply an upward force to the slide hammer with the other hand. Repeat this procedure until the trial implant is removed (i).

Optionally the combination hammer may also be used to remove the trial implant.

Remove the slide hammer from the handle by pushing on the end of the slide hammer.

To detach the trial implant, pull the security ring down and simultaneously turn the applicator knob counterclockwise until it stops. The applicator can now be removed from the trial Implant.

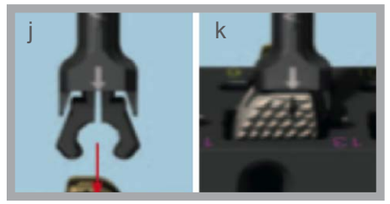


6. IMPLANT INSERTION

1) Connect implant to applicator

To connect the implant to the applicator turn the packing block upwards again. Pull the security ring down and simultaneously turn the knob at the distal end of the applicator counterclockwise. The applicator jaws open (j). Place the jaws over the proximal end of the implant making sure to align the arrows on the end of the applicator with those on the implant (k).

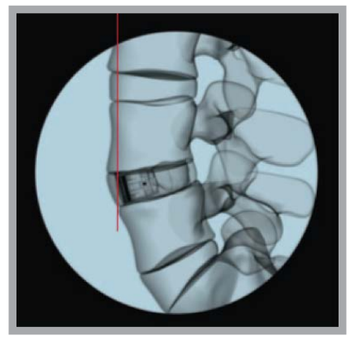
Turn the applicator knob clockwise to close the jaws. During this closing procedure the security ring moves upwards, so that the black color band is visible. Continue to turn the knob until it is tightened (l).



2) Insert implant:

Recheck the applicator/implant connection. Insert the implant into the disc space, ensuring that the orientation of the implant is correct. The implant tip should be orientated medial. Controlled and light hammering on the applicator may be required to advance the implant into the intervertebral disc space.

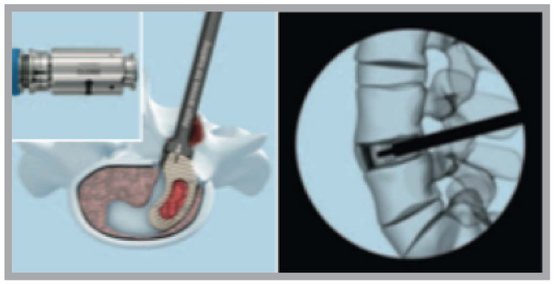
Use fluoroscopy to confirm position and fit of the implant. The tip should be positioned near the anterior edge of the adjacent vertebral bodies.

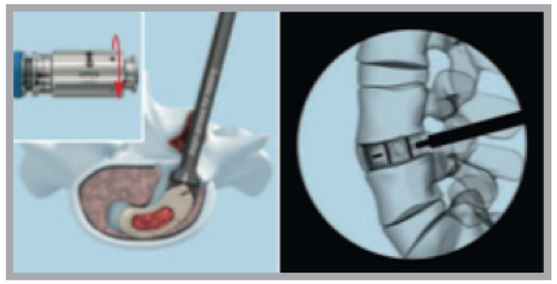


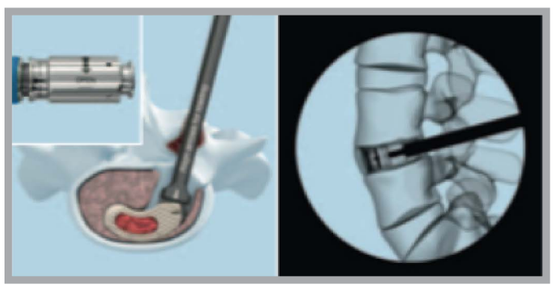
3) Position implant

Turn applicator knob counterclockwise until it stops. Controlled and light hammering on the applicator may be required to pivot the implant into final position.

Use fluoroscopy during the pivoting procedure and confirm the position of the implant. With a medial/lateral fluoroscopic image of the cage in the final position, the two anterior pins of the implant should appear as one line.



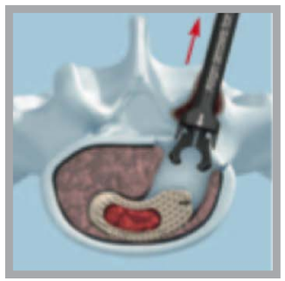


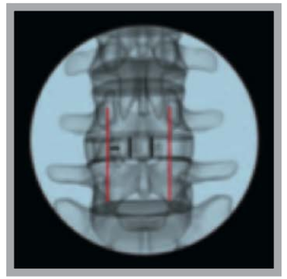


4) Detach implant

To detach the implant, pull the security ring down and simultaneously turn the applicator knob counterclockwise until it stops. The applicator can now be removed from the implant.

Use fluoroscopy to verify final position of the implant. With a medial/lateral fluoroscopic image, the two anterior pins of the implant should appear as one line and the tip marker as a dot.





5) Pack disc space

After the cage is implanted, fill the posterior disc space and the lateral disc space with bone graft or bone graft substitute to create optimal conditions for fusion.

Product Profolio

- ACORN TLIF PEEK Cage

Code	Angle	Specification Width×Length×Height
9906415028	0°	10×28×7
9906416028	0°	10×28×8
9906417028	0°	10×28×9
9906418028	0°	10×28×10
9906419028	0°	10×28×11
9906420028	0°	10×28×12
9906421028	0°	10×28×13
9906422028	0°	10×28×14
9906423028	0°	10×28×15
9906415032	0°	10×32×7
9906416032	0°	10×32×8
9906417032	0°	10×32×9
9906418032	0°	10×32×10
9906419032	0°	10×32×11
9906420032	0°	10×32×12
9906421032	0°	10×32×13

Code	Angle	Specification Width×Length×Height
9906422032	0°	10×32×14
9906423032	0°	10×32×15
9906417628	6°	10×28×9
9906418628	6°	10×28×10
9906419628	6°	10×28×11
9906420628	6°	10×28×12
9906421628	6°	10×28×13
9906422628	6°	10×28×14
9906423628	6°	10×28×15
9906417632	6°	10×32× 9
9906418632	6°	10×32×10
9906419632	6°	10×32×11
9906420632	6°	10×32×12
9906421632	6°	10×32×13
9906422632	6°	10×32×14
9906423632	6°	10×32×15

Instruments

- 8703190
  Applicator outer shaft

- 8703191
  Applicator inner shaft

- 8703192
  Applicator knob

- 8703200
  Removal Tool

- 8703030 Trial Spacer, 0°, 10×28×7
  8703032 Trial Spacer, 0°, 10×28×9

- 8703040 Trial Spacer, 0°, 10×32×7
  8703042 Trial Spacer, 0°, 10×32×9

- 8703052 Trial Spacer, 6°, 10×28×9
  8703053 Trial Spacer, 6°, 10×28×10
  8703054 Trial Spacer, 6°, 10×28×11
  8703055 Trial Spacer, 6°, 10×28×12
  8703056 Trial Spacer, 6°, 10×28×13
  8703058 Trial Spacer, 6°, 10×28×15

- 8703332 Trial Spacer, 6°, 10×32×9
  8703333 Trial Spacer, 6°, 10×32×10
  8703334 Trial Spacer, 6°, 10×32×11
  8703335 Trial Spacer, 6°, 10×32×12
  8703336 Trial Spacer, 6°, 10×32×13
  8703338 Trial Spacer, 6°, 10×32×15

- 8703070
  Bone Impactor

- 8703060
  Bone Packing Block

- 8703210
  Slide Hammer

- 8703220
  Combined Hammer

Grey background products are unconventional stock which may extend the lead time.

■ 8703230
Rasp, Dual-sided, Bayoneted

■ 8703240
Osteotome, Straight

■ 8703130
Ring Curette, Straight, Bayoneted

■ 8703231
Rasp, Dual-sided, Angled, Bayoneted

■ 8703131
Curette, Rectangular, Angled, Right, Bayoneted

■ 8703132
Curette, Rectangular, Angled, Left, Bayoneted

■ 8703133
Curette, Rectangular, Bayoneted

■ 8703250
Impactor, Curved, Standard, Bayoneted

■ 8703260
Lamina Spreader

■ 8703160 Soft Tissue Retractor, width 6 mm
8703161 Soft Tissue Retractor, width 8 mm
8703162 Soft Tissue Retractor, width 10 mm

■ 8703120 Shaver, 7 mm
8703122 Shaver, 9 mm
8703123 Shaver, 10 mm
8703124 Shaver, 11 mm
8703125 Shaver, 12 mm
8703126 Shaver, 13 mm
8703128 Shaver, 15 mm

■ 8338041
T-Handle with Quick Coupling

■ 8703014
Trial Spacer Case

■ 8703015
Implant Case

ACORN TLIF PEEK Cage Instrument Set 8703000

Product Code	Description	Qty
8703190	Applicator outer shaft	2
8703191	Applicator inner shaft	2
8703192	Applicator knob	2
8703200	Removal Tool	1
8703030	Trial Spacer, 0°, 10×28×7	1
8703032	Trial Spacer, 0°, 10×28×9	1
8703040	Trial Spacer, 0°, 10×32×7	1
8703042	Trial Spacer, 0°, 10×32×9	1
8703052	Trial Spacer, 6°, 10×28×9	1
8703053	Trial Spacer, 6°, 10×28×10	1
8703054	Trial Spacer, 6°, 10×28×11	1
8703055	Trial Spacer, 6°, 10×28×12	1
8703056	Trial Spacer, 6°, 10×28×13	1
8703058	Trial Spacer, 6°, 10×28×15	1
8703332	Trial Spacer, 6°, 10×32×9	1
8703333	Trial Spacer, 6°, 10×32×10	1
8703334	Trial Spacer, 6°, 10×32×11	1
8703335	Trial Spacer, 6°, 10×32×12	1
8703336	Trial Spacer, 6°, 10×32×13	1
8703338	Trial Spacer, 6°, 10×32×15	1
8703070	Bone Impactor	1
8703060	Bone Packing Block	1
8703210	Slide Hammer	1
8703220	Combined Hammer	1
8703230	Rasp, Dual-sided, Bayoneted	1
8703240	Osteotome, Straight	1
8703130	Ring Curette, Straight, Bayoneted	1
8703231	Rasp, Dual-sided, Angled, Bayoneted	1
8703131	Curette, Rectangular, Angled, Right, Bayoneted	1
8703132	Curette, Rectangular, Angled, Left, Bayoneted	1
8703133	Curette, Rectangular, Bayoneted	1
8703250	Impactor, Curved, Standard, Bayoneted	1
8703260	Lamina Spreader	1
8703160	Soft Tissue Retractor, width 6 mm	1
8703161	Soft Tissue Retractor, width 8 mm	1
8703162	Soft Tissue Retractor, width 10 mm	1
8703120	Shaver, 7 mm	1
8703122	Shaver, 9 mm	1
8703123	Shaver, 10 mm	1
8703124	Shaver, 11 mm	1
8703125	Shaver, 12 mm	1
8703126	Shaver, 13 mm	1
8703128	Shaver, 15 mm	1
8338041	T-Handle with Quick Coupling	1
8703014	Trial Spacer Case	1
8703015	Implant Case	1
8703016	Instrument Case	1