



Surgical Technique

Lumber cage (PLIF)

about us

Auxein Medical is an integrated, research based, orthopaedic Implants & instruments manufacturing company, producing a wide range of quality, affordable generic implants, trusted by healthcare professionals and patients across geographies. It is the Company's constant endeavor to provide a wide basket of generic and our innovator products that exceed the highest expectations of customers in term of quality and safety. The company has world-class manufacturing unit established in india and serves customers in over 75 countries worldwide.

Our Achievements



Guidelines

This publication sets forth detailed recommended procedures for using Auxein Medical devices and instruments.

It offers guidance that needs to be heeded. However, with any such technical guide, each surgeon must consider the unique needs of each patient and make appropriate adjustments when and as required.

A workshop training under DAIS Academy by Auxein will provide assistance prior to first surgery. It is vital to know that all non-sterile devices must be cleaned and sterilized before use.

Moreover, multi-component instruments must be disassembled for cleaning. The surgeon must discuss all relevant risks, including the finite lifetime of the device, with the patient, when necessary.

Please NOTE that all the bone screws referenced in this document here are not approved for screw attachment or fixation in the areas not mentioned in this publication.

Warning:

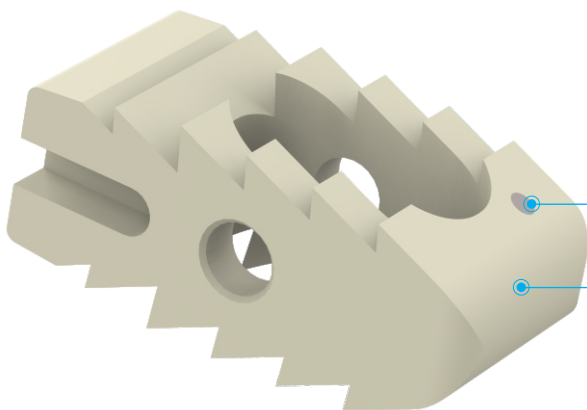
This description is not sufficient for immediate application of the instrumentation. Instruction by a surgeon experienced in handling this instrumentation is highly recommended.



PRODUCT DESCRIPTION

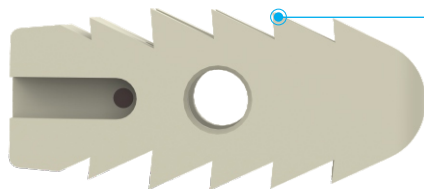
Lumbar Cage (PLIF)

PEEK OPTIMA

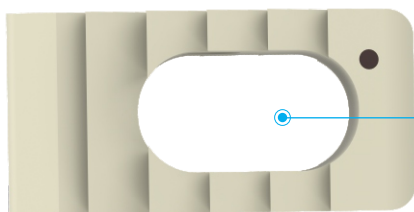


Titanium Pin for radiography detection for PEEK Cage

Smooth Wedge edge for smooth insertation



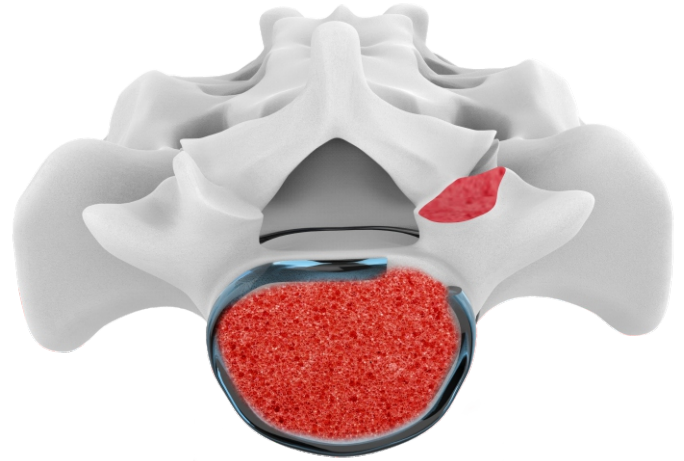
Teeth on the surface reduce likelihood of Expulsion.



Large window to reduce stiffness of the cage and accommodates autogenous bone graft or bone graft material.

Step-1

- A facetectomy is performed on the ipsilateral side. Using an Osteotome or drill, remove the ascending and descending articular processes.
- Additional bony removal may be carried out using a Kerrison Rongeur or drill.
- A 1cm square annulotomy is made with a scalpel in Kambin's triangle. Disc is removed using a Pituitary Rongeur and Curettes.



Both facet joints should be removed during surgery. Typically, a cautery tool is used to achieve this. By using a burr, rongeur, or other suitable tool to remove the articular cartilage from the facet joint, the facet is made ready for fusion. On the side of the TLIF, the inferior and superior articular surfaces are eliminated.

The main goal of this step is to remove extruded fragments, to decompress neural elements, and to provide entry into the disc space for distraction with minimal or no nerve root retraction. If there is significant disc space collapse, a complete discectomy may not be possible until disc space distraction is accomplished.

Step-2

Distraction

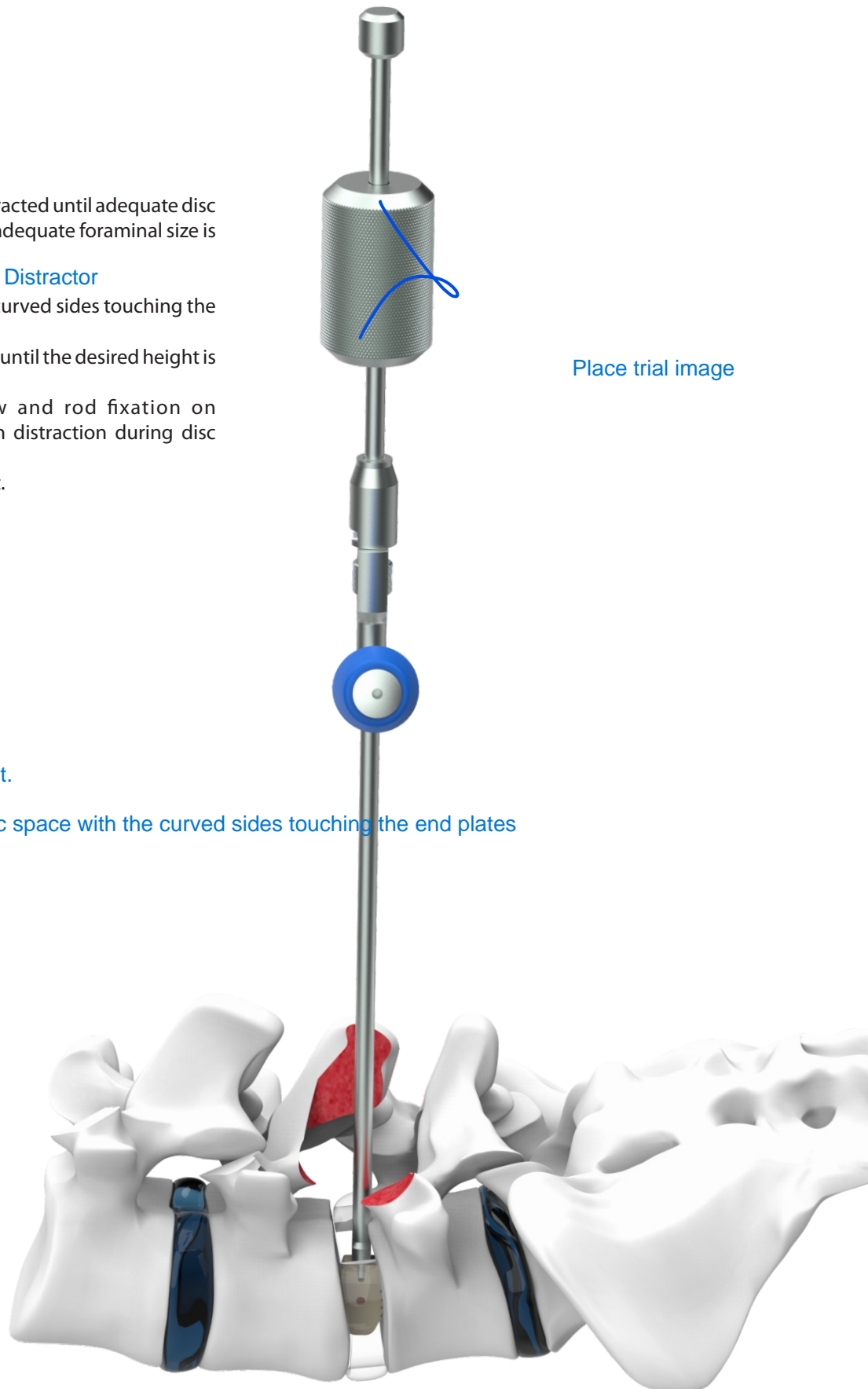
The disc space is sequentially distracted until adequate disc space height is obtained and adequate foraminal size is restored.

Trial in place of Distractor

- Insert the Distractor with the curved sides touching the endplates.
- Sequentially insert Distractors until the desired height is obtained.
- Insert supplemental screw and rod fixation on contralateral side to maintain distraction during disc space preparation.
- Provisionally tighten construct.

Effective distraction aids in removal of the superior articular process, decompression of the neuroforamen, preparation of the disc space and insertion of the Lumbar Cage. This may be accomplished through distraction between bony element.

Insert the trial in between the disc space with the curved sides touching the end plates



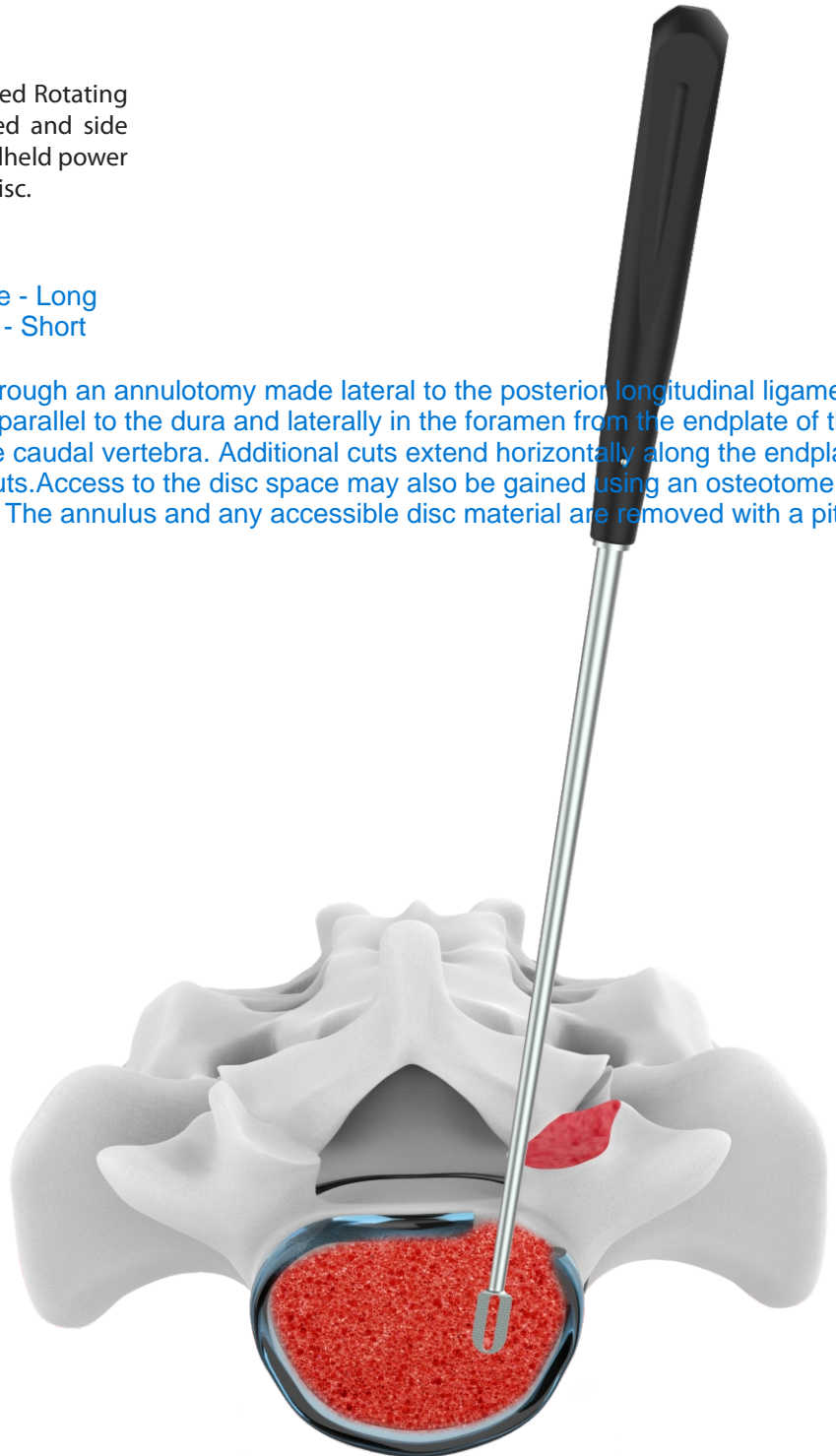
Place trial image

Step-3**Disc Space Preparation**

Remove disc using either the Straight or Curved Rotating Cutters. The Rotating Cutters are blunt tipped and side cutting to improve safety. A T-handle or a handheld power drill may be used for more efficient removal of disc.

SP-098 Straight Serrated Cup Curette - Long
SP-099 Straight Serrated Cup Curette - Short

Access to the disc space is achieved through an annulotomy made lateral to the posterior longitudinal ligament. Using a scalpel, vertical cuts are made parallel to the dura and laterally in the foramen from the endplate of the cephalad vertebra to the endplate of the caudal vertebra. Additional cuts extend horizontally along the endplates of the vertebrae, connecting the vertical cuts. Access to the disc space may also be gained using an osteotome at the superior endplate of the lower vertebra. The annulus and any accessible disc material are removed with a pituitary rongeur.



Step-4
Endplate Preparation

- Specifically designed angled instruments allow disc resection and endplate preparation.

A curette, endplate shaver or narrow Cobb elevator is used to elevate disc material from the endplates of the vertebral bodies. Angled curettes can also be used to elevate the disc from the endplates. An easily missed portion of the disc lies posteriorly and centrally within the disc space, just ventral to the spinal canal. Special effort should be directed to disc removal in this zone to provide optimal surface area for interbody fusion. Straight and angled pituitary rongeurs should be used to remove the disc. Additionally, multiple straight and angled curettes may be necessary to ensure adequate discectomy. Fluoroscopy may help in ensuring an adequate discectomy while limiting the risk of unintentional disruption to the ventral, lateral or posteromedial annulus.

Scraper Flat image is missing.

SP-118 Round Scraper, 10.5mm x 10mm

SP-119 Round Scraper, 9.5mm x 8.5mm

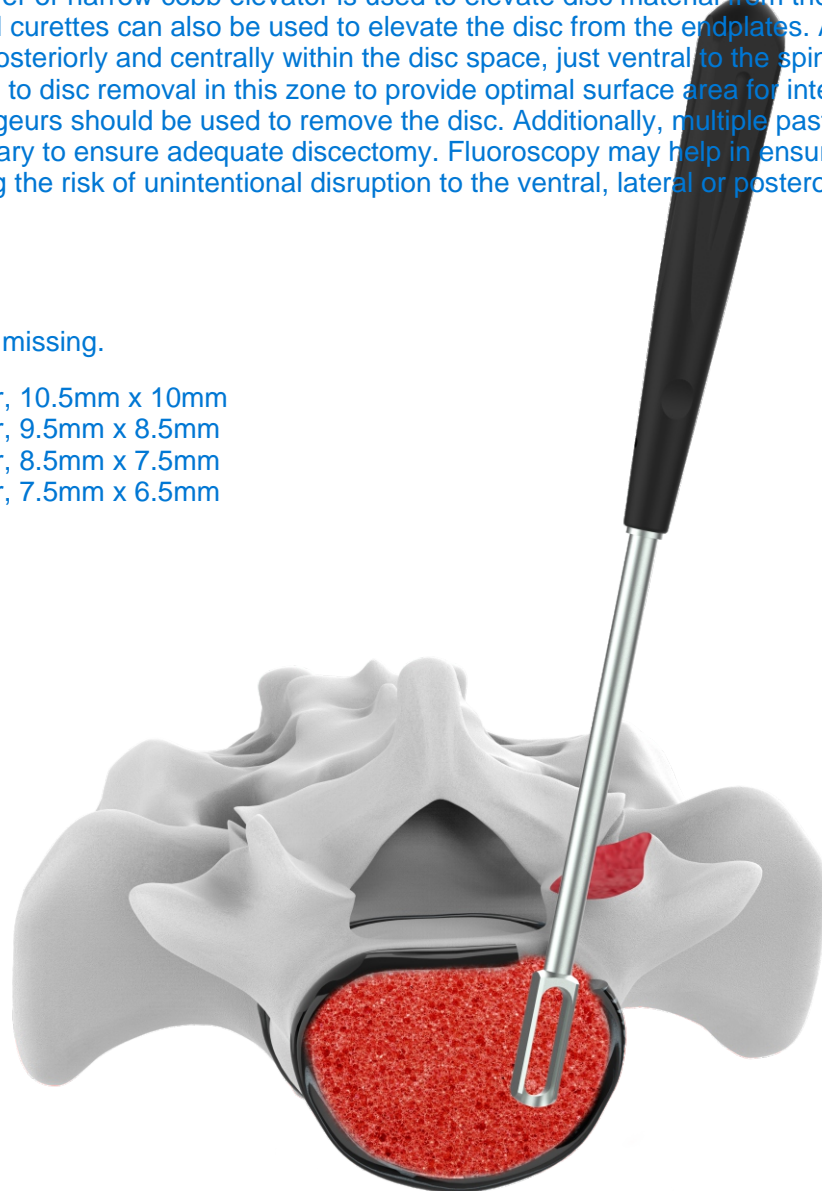
SP-120 Round Scraper, 8.5mm x 7.5mm

SP-121 Round Scraper, 7.5mm x 6.5mm

SP-114 Scraper, 7mm

SP-115 Scraper, 8mm

SP-116 Scraper, 9mm



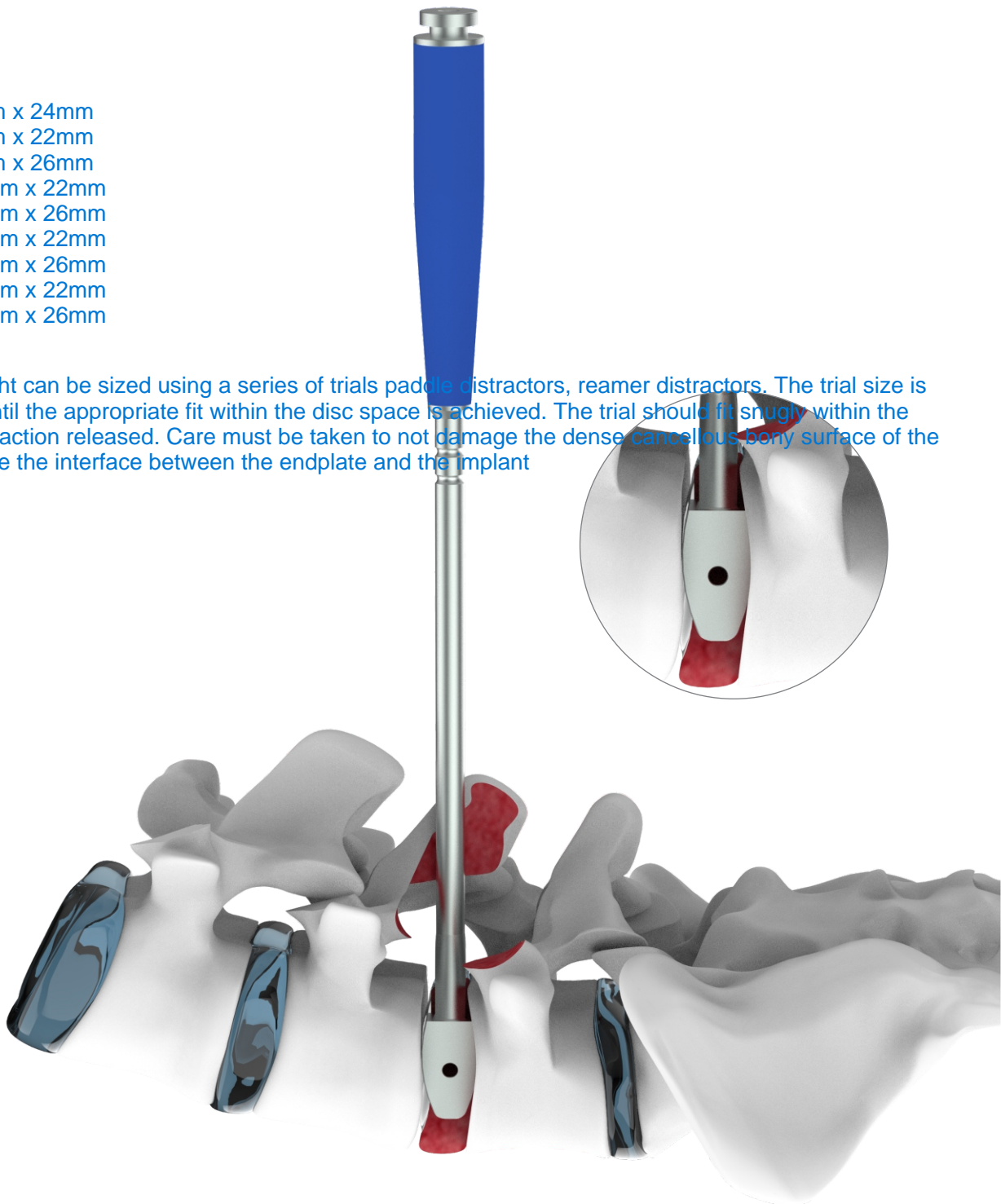
Step-5

Trial Insertion

Insert trial until desired disc space height is established. Use A/P and lateral fluoroscopy to confirm proper placement and trajectory.

- SP-102 Trial, 6mm x 24mm
- SP-103 Trial, 8mm x 22mm
- SP-104 Trial, 8mm x 26mm
- SP-105 Trial, 10mm x 22mm
- SP-106 Trial, 10mm x 26mm
- SP-107 Trial, 12mm x 22mm
- SP-108 Trial, 12mm x 26mm
- SP-109 Trial, 14mm x 22mm
- SP-110 Trial, 14mm x 26mm

The disc space height can be sized using a series of trials paddle distractors, reamer distractors. The trial size is serially increased until the appropriate fit within the disc space is achieved. The trial should fit snugly within the disc space with distraction released. Care must be taken to not damage the dense cancellous bony surface of the endplates to optimize the interface between the endplate and the implant



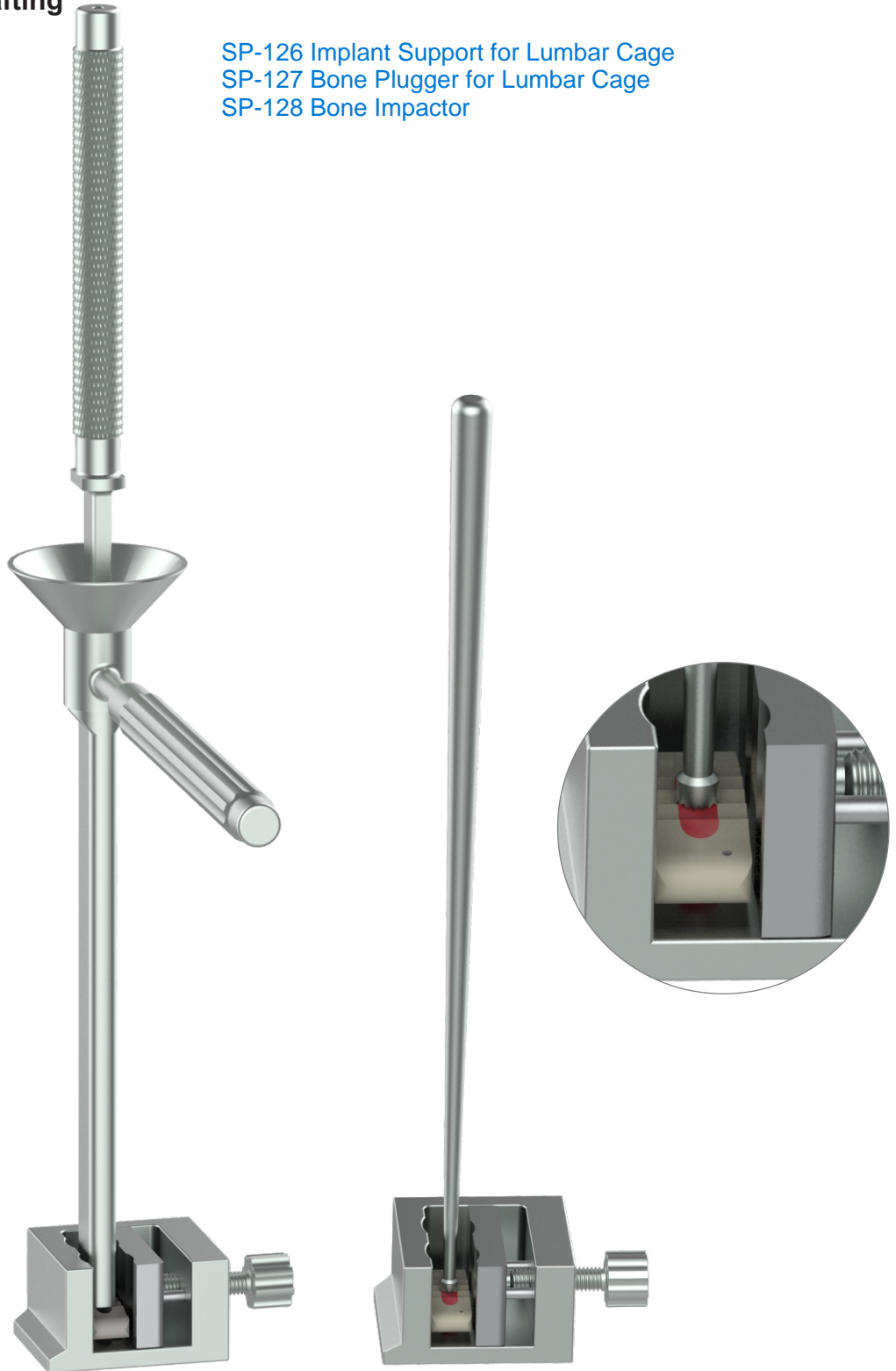
Add a page before this page that will illustrate implant loading. I will provide the model for that.

Step-5

implant preapation & grafting

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SP-126 Implant Support for Lumbar Cage
SP-127 Bone Plugger for Lumbar Cage
SP-128 Bone Impactor



Will replace this model with Newer one.

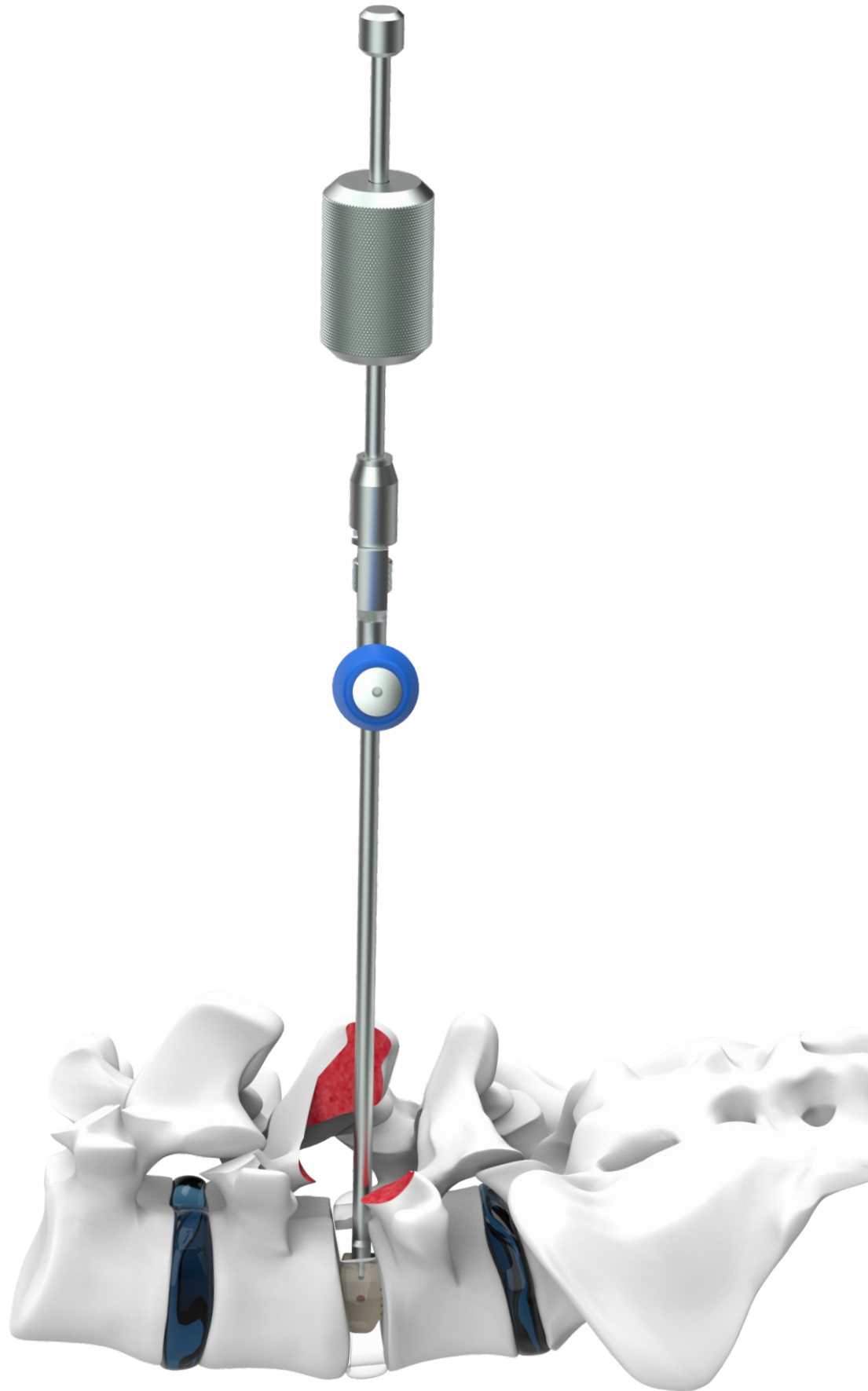
Step-6 Please show the power clip that will illustrate how the slap hammer assemble with the inserter.

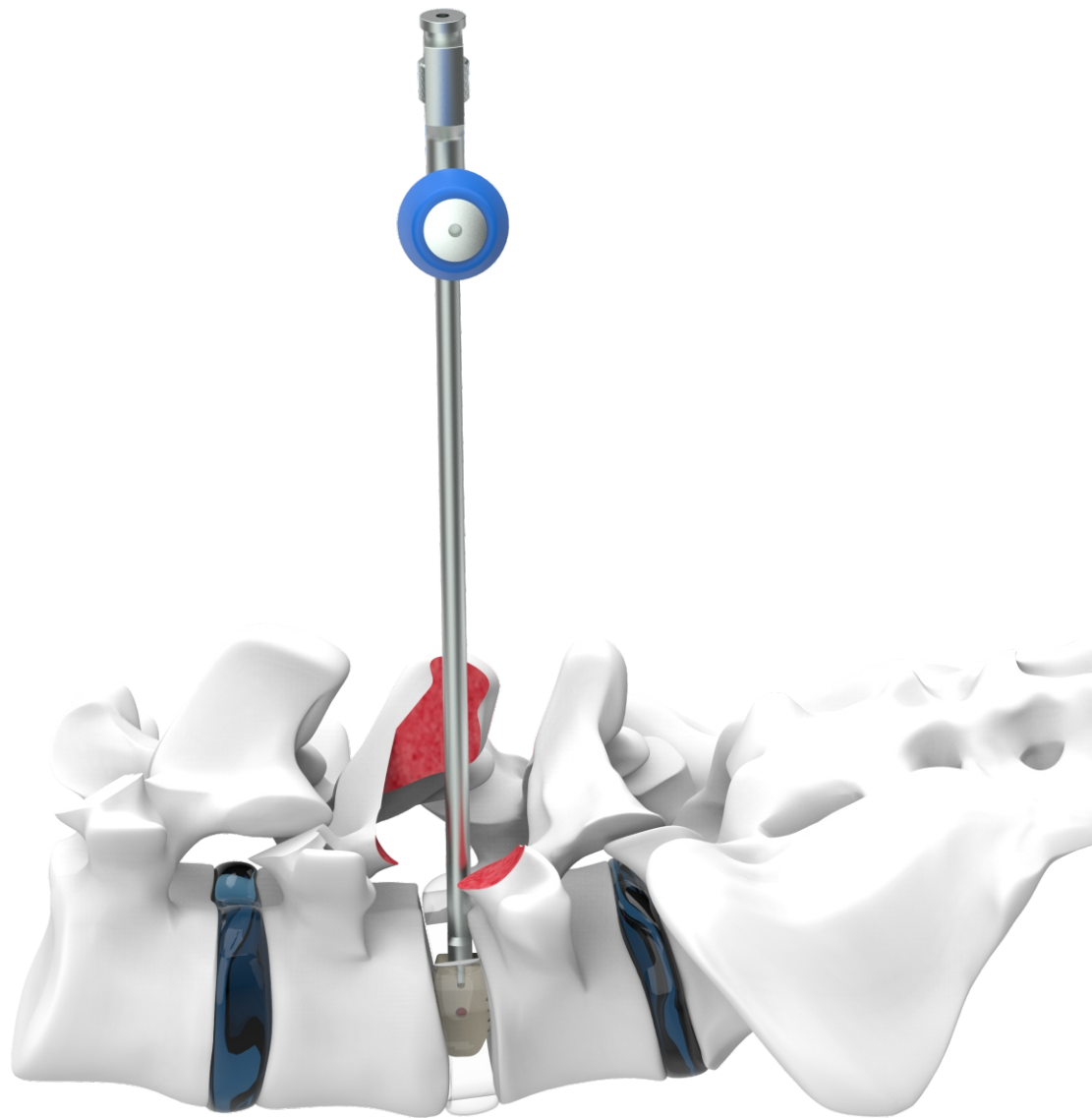
Insert Construct

- The appropriate size construct is chosen from the trialing step.
- The appropriate size construct is firmly attached to the inserter.
- Before inserting the construct, place autograft anteriorly and contralaterally or in the bone construct central cavity.
- Gently impact the construct until it is 3 to 4mm below the posterior margin of annulus.
- Care should be taken to ensure the construct is aligned properly.

SP-111 Threaded Inserter for Lumbar Cage
SP-113 Slap Hammer for Lumbar Cage

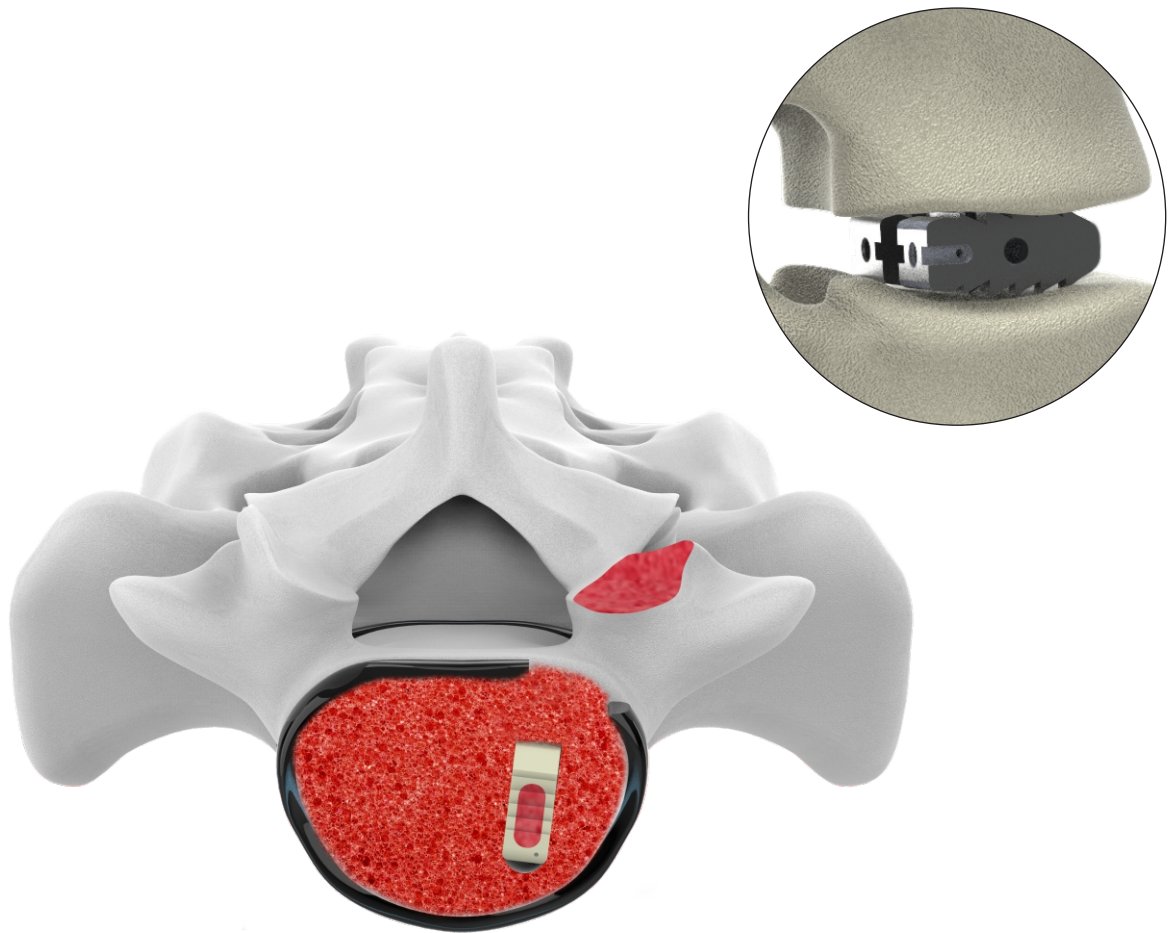






Step-7**Final Placement**

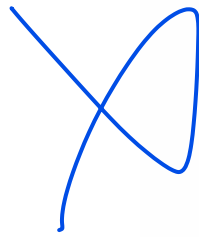
- After the final construct is placed, the contralateral screw-rod construct is compressed to preload interspace and restore lordosis. The extradural space and foramina are probed to ensure adequate decompression of the neural elements.
- To facilitate satisfactory immobilization of the grafted interspace, segmental internal fixation is applied ipsilaterally using standard technique.



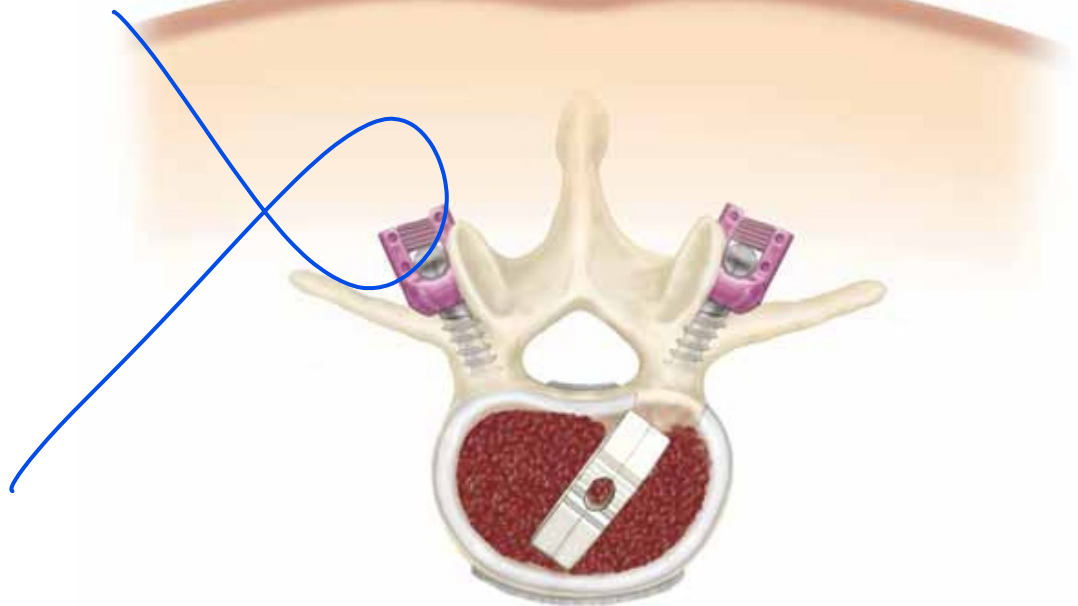
Step-8

Additional Fixation Options

SPINAL SYSTEM

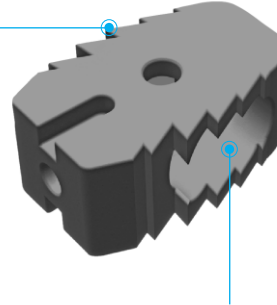


ROD INSERTION SYSTEM



Lumbar Cage (PLIF)

Specially Aligned Teeth
teeth on superior and inferior surfaces ensure
good primary stability and reduce the risk of cage migration



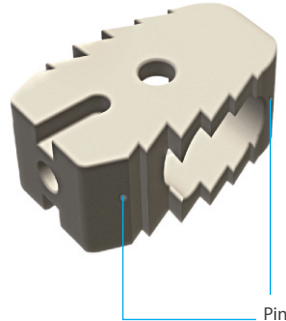
TITANIUM

Axial Window
Accommodates autogenous bone graft or bone graft
substitute to allow fusion to occur through the cage

| Code | Dia X Length |
|---------|--------------------|
| SP-1665 | 6mm x 10mm x 20mm |
| SP-1666 | 7mm x 10mm x 20mm |
| SP-910 | 8mm x 10mm x 20mm |
| SP-1667 | 9mm x 10mm x 20mm |
| SP-911 | 10mm x 10mm x 20mm |
| SP-1668 | 11mm x 10mm x 20mm |
| SP-912 | 12mm x 10mm x 20mm |
| SP-1669 | 13mm x 10mm x 20mm |
| SP-913 | 14mm x 10mm x 20mm |
| SP-1670 | 15mm x 10mm x 20mm |
| SP-914 | 16mm x 10mm x 20mm |
| SP-1723 | 17mm X 10mm X 20mm |
| SP-1724 | 18mm x 10mm x 20mm |
| SP-1725 | 19mm x 10mm x 20mm |
| SP-1671 | 6mm x 10mm x 22mm |
| SP-1672 | 7mm x 10mm x 22mm |
| SP-397 | 8mm x 10mm x 22mm |
| SP-1673 | 9mm x 10mm x 22mm |
| SP-399 | 10mm x 10mm x 22mm |
| SP-1674 | 11mm x 10mm x 22mm |
| SP-401 | 12mm x 10mm x 22mm |
| SP-1675 | 13mm x 10mm x 22mm |
| SP-403 | 14mm x 10mm x 22mm |
| SP-1676 | 15mm x 10mm x 22mm |
| SP-908 | 16mm x 10mm x 22mm |
| SP-1726 | 17mm x 10mm x 22mm |
| SP-1727 | 18mm x 10mm x 22mm |
| SP-1728 | 19mm x 10mm x 22mm |

| Code | Dia X Length |
|---------|--------------------|
| SP-1677 | 6mm x 10mm x 25mm |
| SP-1678 | 7mm x 10mm x 25mm |
| SP-915 | 8mm x 10mm x 25mm |
| SP-1679 | 9mm x 10mm x 25mm |
| SP-916 | 10mm x 10mm x 25mm |
| SP-1680 | 11mm x 10mm x 25mm |
| SP-917 | 12mm x 10mm x 25mm |
| SP-1681 | 13mm x 10mm x 25mm |
| SP-918 | 14mm x 10mm x 25mm |
| SP-1682 | 15mm x 10mm x 25mm |
| SP-919 | 16mm x 10mm x 25mm |
| SP-1729 | 17mm x 10mm x 25mm |
| SP-1730 | 18mm x 10mm x 25mm |
| SP-1731 | 19mm x 10mm x 25mm |
| SP-1683 | 6mm x 10mm x 26mm |
| SP-1684 | 7mm x 10mm x 26mm |
| SP-398 | 8mm x 10mm x 26mm |
| SP-1685 | 9mm x 10mm x 26mm |
| SP-400 | 10mm x 10mm x 26mm |
| SP-1686 | 11mm x 10mm x 26mm |
| SP-402 | 12mm x 10mm x 26mm |
| SP-1687 | 13mm x 10mm x 26mm |
| SP-404 | 14mm x 10mm x 26mm |
| SP-1688 | 15mm x 10mm x 26mm |
| SP-909 | 16mm x 10mm x 26mm |
| SP-1732 | 17mm x 10mm x 26mm |
| SP-1733 | 18mm x 10mm x 26mm |
| SP-1734 | 19mmx 10mm x 26mm |

Lumbar Cage (PLIF)



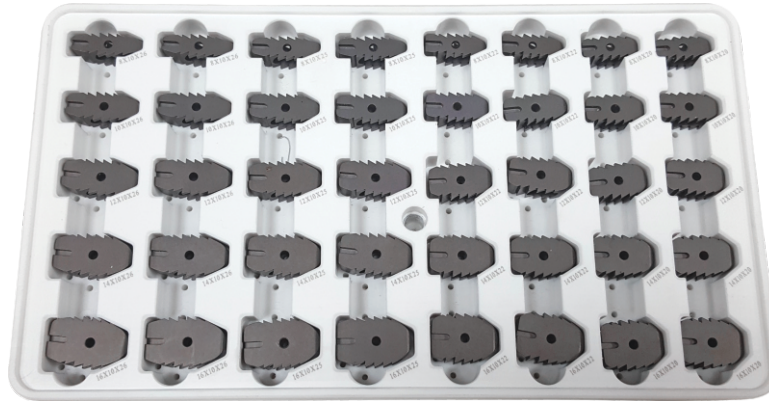
PEEK OPTIMA

available in: **STERILE | R**

| Code | Dia X Length |
|----------------|---------------------|
| SP-1689 | 6mm x 10mm x 20mm |
| SP-1690 | 7mm x 10mm x 20mm |
| SP-977 | 8mm x 10mm x 20mm |
| SP-1691 | 9mm x 10mm x 20mm |
| SP-978 | 10mm x 10mm x 20mm |
| SP-1692 | 11mm x 10mm x 20mm |
| SP-979 | 12mm x 10mm x 20mm |
| SP-1693 | 13mm x 10mm x 20mm |
| SP-980 | 14mm x 10mm x 20mm |
| SP-1694 | 15mm x 10mm x 20mm |
| SP-981 | 16mm x 10mm x 20mm |
| SP-1813 | 17mm x 10mm x 20mm |
| SP-1814 | 18mm x 10mm x 20mm |
| SP-1815 | 19mm x 10mm x 20mm |
| SP-1695 | 6mm x 10mm x 22mm |
| SP-1696 | 7mm x 10mm x 22mm |
| SP-409 | 8mm x 10mm x 22mm |
| SP-1697 | 9mm x 10mm x 22mm |
| SP-410 | 10mm x 10mm x 22mm |
| SP-1698 | 11mm x 10mm x 22mm |
| SP-411 | 12mm x 10mm x 22mm |
| SP-1699 | 13mm x 10mm x 22mm |
| SP-412 | 14mm x 10mm x 22mm, |
| SP-1700 | 15mm x 10mm x 22mm |
| SP-952 | 16mm x 10mm x 22mm |
| SP-1816 | 17mm x 10mm x 22mm |
| SP-1817 | 18mm x 10mm x 22mm |
| SP-1818 | 19mm x 10mm x 22mm |

| Code | Dia X Length |
|----------------|--------------------|
| SP-1701 | 6mm x 10mm x 25mm |
| SP-1702 | 7mm x 10mm x 25mm |
| SP-982 | 8mm x 10mm x 25mm |
| SP-1703 | 9mm x 10mm x 25mm |
| SP-983 | 10mm x 10mm x 25mm |
| SP-1704 | 11mm x 10mm x 25mm |
| SP-984 | 12mm x 10mm x 25mm |
| SP-1705 | 13mm x 10mm x 25mm |
| SP-985 | 14mm x 10mm x 25mm |
| SP-1706 | 15mm x 10mm x 25mm |
| SP-986 | 16mm x 10mm x 25mm |
| SP-1819 | 17mm x 10mm x 25mm |
| SP-1820 | 18mm x 10mm x 25mm |
| SP-1821 | 19mm x 10mm x 25mm |
| SP-1707 | 6mm x 10mm x 26mm |
| SP-1708 | 7mm x 10mm x 26mm |
| SP-413 | 8mm x 10mm x 26mm |
| SP-1709 | 9mm x 10mm x 26mm |
| SP-414 | 10mm x 10mm x 26mm |
| SP-1710 | 11mm x 10mm x 26mm |
| SP-415 | 12mm x 10mm x 26mm |
| SP-1711 | 13mm x 10mm x 26mm |
| SP-416 | 14mm x 10mm x 26mm |
| SP-1712 | 15mm x 10mm x 26mm |
| SP-987 | 16mm x 10mm x 26mm |
| SP-1822 | 17mm x 10mm x 26mm |
| SP-1823 | 18mm x 10mm x 26mm |
| SP-1824 | 19mm x 10mm x 26mm |

4-007-01 Lumbar Cage (PLIF) Implant Set



| Code | Product Specification (mm) | Qty. |
|-----------------|--|------|
| SP-910 | Lumbar Cage, 8 x 10 x 20, Titanium | 2 |
| SP-397 | Lumbar Cage, 8 x 10 x 22, Titanium | 2 |
| SP-915 | Lumbar Cage, 8 x 10 x 25, Titanium | 2 |
| SP-398 | Lumbar Cage, 8 x 10 x 26, Titanium | 2 |
| SP-911 | Lumbar Cage, 10 x 10 x 20, Titanium | 2 |
| SP-399 | Lumbar Cage, 10 x 10 x 22, Titanium | 2 |
| SP-916 | Lumbar Cage, 10 x 10 x 25, Titanium | 2 |
| SP-400 | Lumbar Cage, 10 x 10 x 26, Titanium | 2 |
| SP-912 | Lumbar Cage, 12 x 10 x 20, Titanium | 2 |
| SP-401 | Lumbar Cage, 12 x 10 x 22, Titanium | 2 |
| SP-917 | Lumbar Cage, 12 x 10 x 25, Titanium | 2 |
| SP-402 | Lumbar Cage, 12 x 10 x 26, Titanium | 2 |
| SP-913 | Lumbar Cage, 14 x 10 x 20, Titanium | 2 |
| SP-403 | Lumbar Cage, 14 x 10 x 22, Titanium | 2 |
| SP-918 | Lumbar Cage, 14 x 10 x 25, Titanium | 2 |
| SP-404 | Lumbar Cage, 14 x 10 x 26, Titanium | 2 |
| SP-914 | Lumbar Cage, 16 x 10 x 20, Titanium | 2 |
| SP-908 | Lumbar Cage, 16 x 10 x 22, Titanium | 2 |
| SP-919 | Lumbar Cage, 16 x 10 x 25, Titanium | 2 |
| SP-909 | Lumbar Cage, 16 x 10 x 26, Titanium | 2 |
| IMPL-971 | Tray with Cover for Lumbar Cage (PLIF) Implant Set | 1 |

SP-098 Straight Serrated Cup Curette - Long



SP-099 Straight Serrated Cup Curette - Short



SP-100 Pull Scraper



SP-101 Push Scraper



SP-102 Trial, 6mm x 24mm



SP-103 Trial, 8mm x 22mm



SP-104 Trial, 8mm x 26mm



SP-105 Trial, 10mm x 22mm



SP-106 Trial, 10mm x 26mm



SP-107 Trial, 12mm x 22mm



SP-108 Trial, 12mm x 26mm



SP-109 Trial, 14mm x 22mm



SP-110 Trial, 14mm x 26mm



SP-111 Threaded Inserter for Lumbar Cage



SP-112 Wrench, Ø3.2mm, for Lumbar Cage



SP-113 Slap Hammer for Lumbar Cage



SP-114 Scraper, 7mm



SP-115 Scraper, 8mm



SP-116 Scraper, 9mm**SP-117** Slap Plate**SP-118** Round Scraper, 10.5mm x 10mm**SP-119** Round Scraper, 9.5mm x 8.5mm**SP-120** Round Scraper, 8.5mm x 7.5mm**SP-121** Round Scraper, 7.5mm x 6.5mm

SP-122 Root Retractor - Large



SP-123 Root Retractor - Small



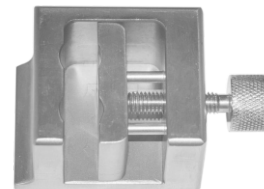
SP-124 Elevator



SP-125 Graft Impactor for Lumbar Cage



SP-126 Implant Support for Lumbar Cage



SP-127 Bone Plugger for Lumbar Cage



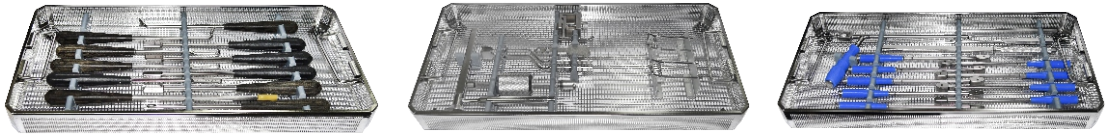
SP-128

Bone Impactor



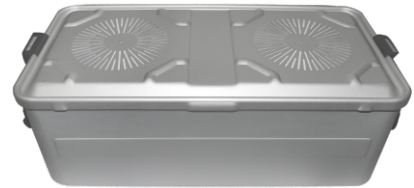
SP-470

Mesh Trays for Lumbar Cage (PLIF) Instrument Set

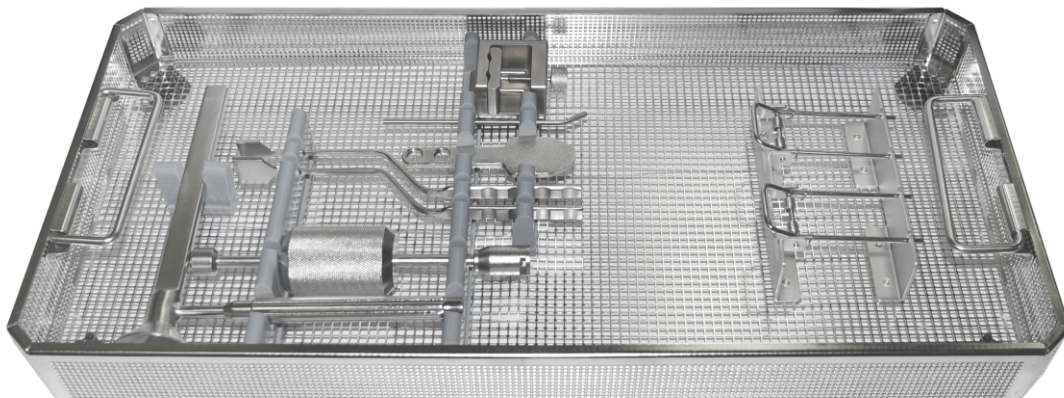
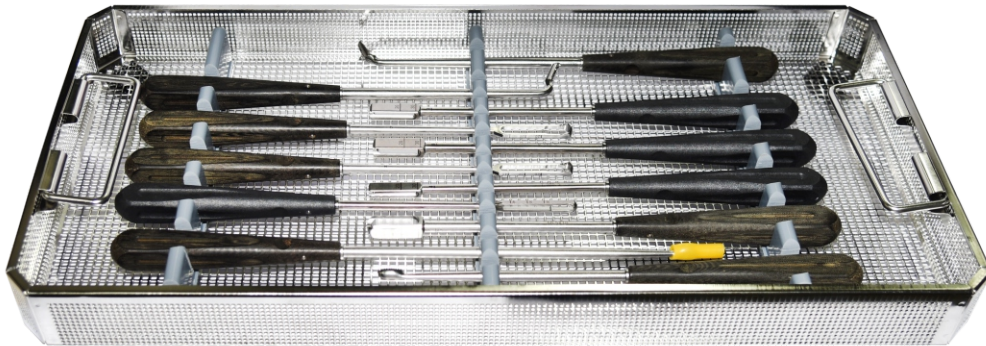
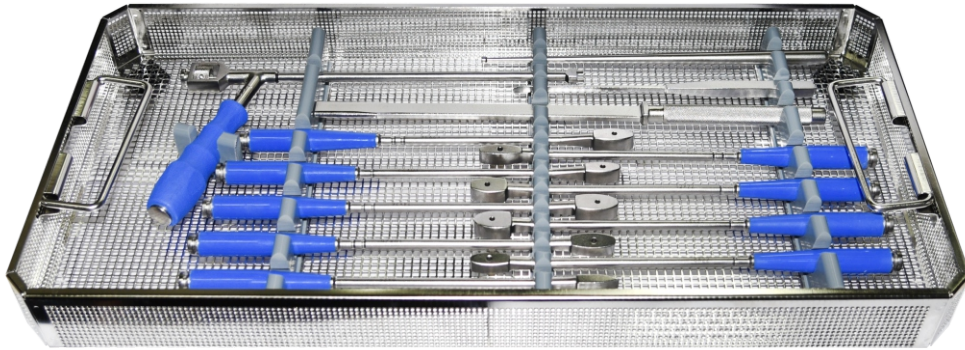


SP-097

Sterilization Container for Lumbar Cage (PLIF) Instrument Set



SP-096 Lumbar Cage (PLIF) Instrument Set



SP-096 Lumbar Cage Instrument Set

| Code | Product Specification | Qty. |
|--------|---|------|
| SP-098 | Straight Serrated Cup Curette - Long | 1 |
| SP-099 | Straight Serrated Cup Curette - Short | 1 |
| SP-100 | Pull Scraper | 1 |
| SP-101 | Push Scraper | 1 |
| SP-102 | Trial, 6mm x 24mm | 1 |
| SP-103 | Trial, 8mm x 22mm | 1 |
| SP-104 | Trial, 8mm x 26mm | 1 |
| SP-105 | Trial, 10mm x 22mm | 1 |
| SP-106 | Trial, 10mm x 26mm | 1 |
| SP-107 | Trial, 12mm x 22mm | 1 |
| SP-108 | Trial, 12mm x 26mm | 1 |
| SP-109 | Trial, 14mm x 22mm | 1 |
| SP-110 | Trial, 14mm x 26mm | 1 |
| SP-111 | Threaded Inserter for Lumbar Cage | 1 |
| SP-112 | Wrench, Ø3.2mm, for Lumbar Cage | 1 |
| SP-113 | Slap Hammer for Lumbar Cage | 1 |
| SP-114 | Scraper, 7mm | 1 |
| SP-115 | Scraper, 8mm | 1 |
| SP-116 | Scraper, 9mm | 1 |
| SP-117 | Slap Plate | 1 |
| SP-118 | Round Scraper, 10.5mm x 10mm | 1 |
| SP-119 | Round Scraper, 9.5mm x 8.5mm | 1 |
| SP-120 | Round Scraper, 8.5mm x 7.5mm | 1 |
| SP-121 | Round Scraper, 7.5mm x 6.5mm | 1 |
| SP-122 | Root Retractor - Large | 1 |
| SP-123 | Root Retractor - Small | 1 |
| SP-124 | Elevator | 1 |
| SP-125 | Graft Impactor for Lumbar Cage | 1 |
| SP-126 | Implant Support for Lumbar Cage | 1 |
| SP-127 | Bone Plugger for Lumbar Cage | 1 |
| SP-128 | Bone Impactor | 1 |
| SP-470 | Mesh Trays for Lumbar Cage (PLIF) Instrument Set | 3 |
| SP-097 | Sterilization Container for Lumbar Cage (PLIF) Instrument Set | 1 |



XXXXXX

USA

Auxein Inc.
1500 Nw 89th Court, Suite 107-108
Doral, Florida 33172
Tel: +1 305 395 6062
E Fax: +1 305 395 6262
Email: USoffice@auxein.com

MEXICO

Auxein México, S.A. de C.V.
Tepic 139 int 801, Colonia Roma Sur,
Alcaldía Cuauhtémoc, CDMX,
México, C.P. 06760
Tel: +521 55 7261 0318
Email: info@auxein.mx

INDIA

Auxein Medical Pvt. Ltd.
Plot No. 168-169-170, Phase-4,
Kundli Industrial Area,
HSIIDC, Sector-57, Sonapat - 131028, Haryana
Tel: +91 99106 43638 | Fax: +91 86077 70197
Email: info@auxein.com