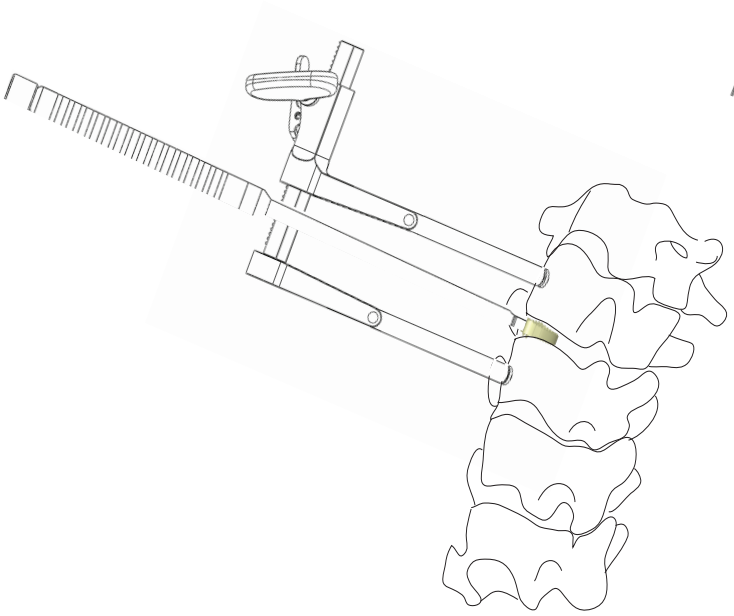
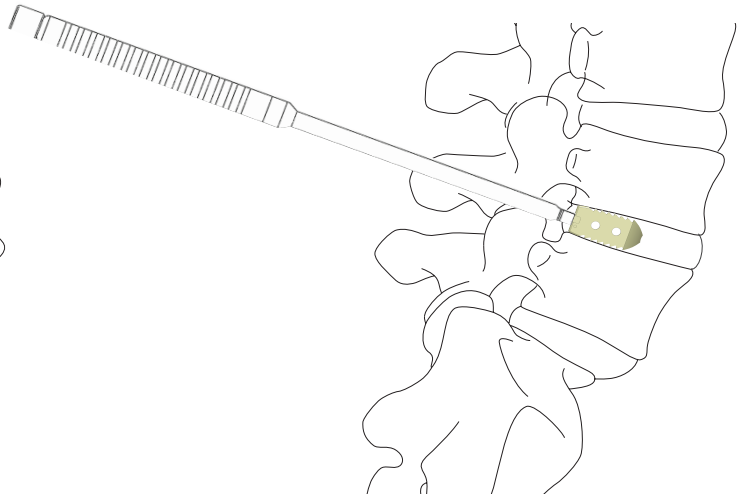
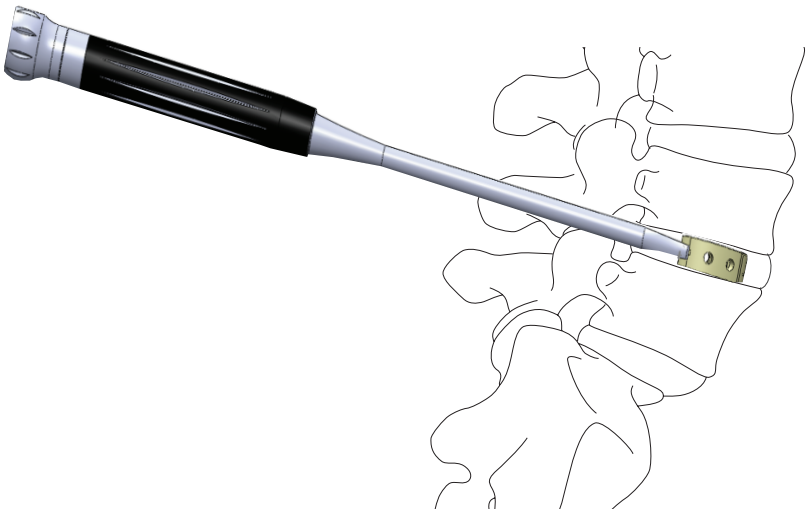
IMPLANTS SIZED TO MATCH VERTEBRAL ANATOMY AND RESTORE LORDOSIS TO THE CERVICAL AND LUMBAR SPINE

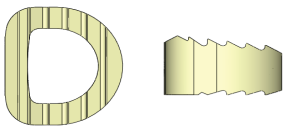
G SURGICAL PEEK SYSTEM

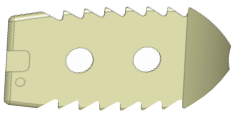
G SURGICAL
INTERVERTEBRAL SPACER FUSION



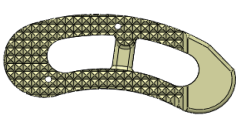












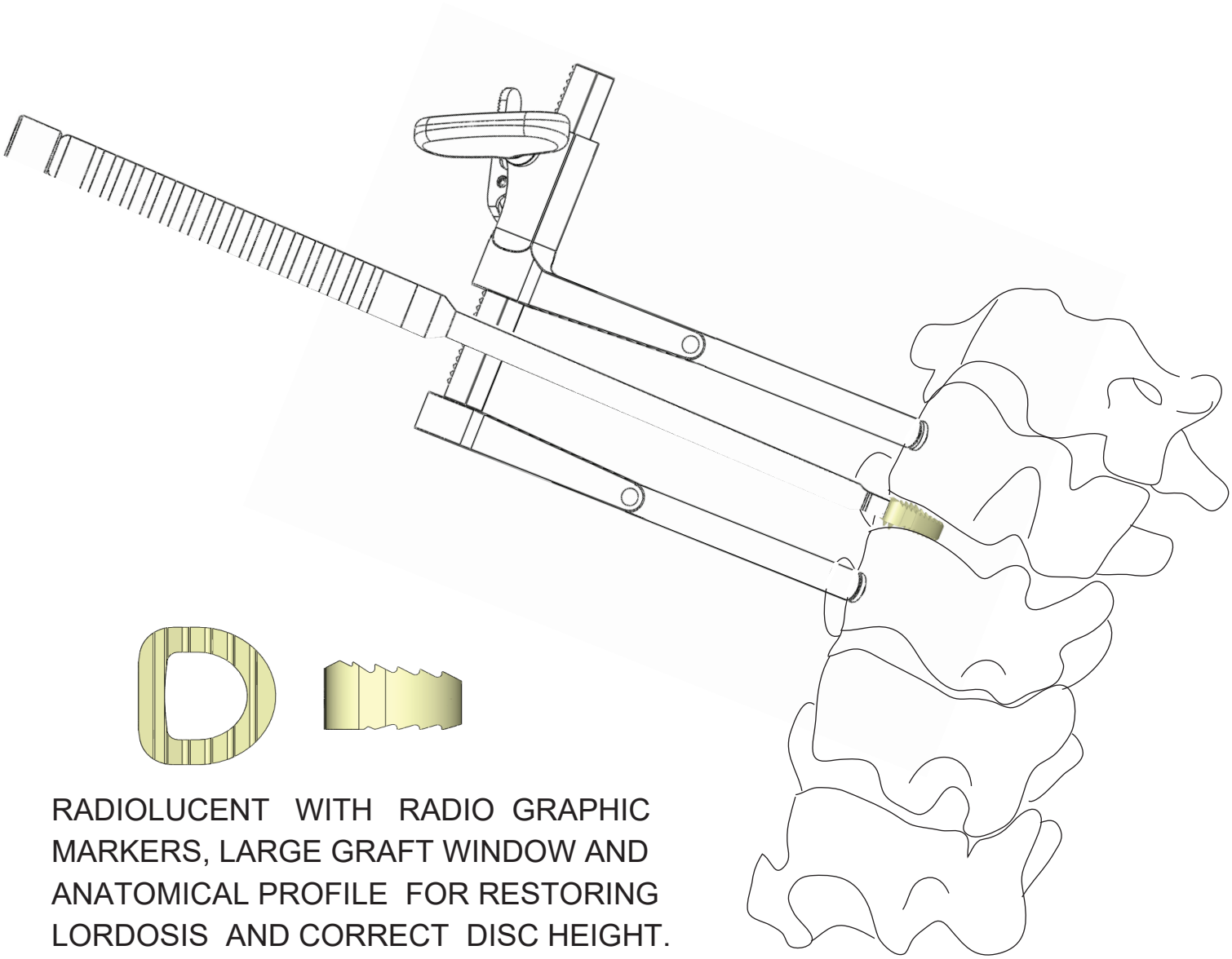
G SURGICAL GPS

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Email : usa@gsurgical.com
Web : www.gsurgical.com

IMPLANTS SIZED TO MATCH VERTEBRAL ANATOMY AND RESTORE LORDOSIS TO THE CERVICAL SPINE

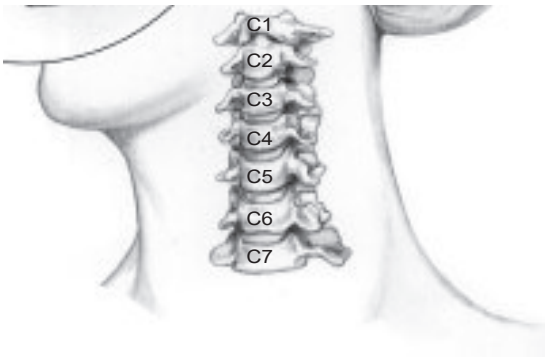
G SURGICAL PEEK SYSTEM

G SURGICAL CERVICAL INTERVERTEBRAL SPACER FUSION



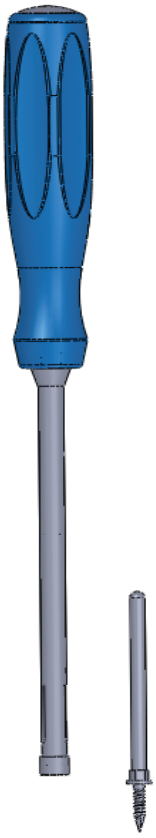
RADIOLUCENT WITH RADIO GRAPHIC MARKERS, LARGE GRAFT WINDOW AND ANATOMICAL PROFILE FOR RESTORING LORDOSIS AND CORRECT DISC HEIGHT.

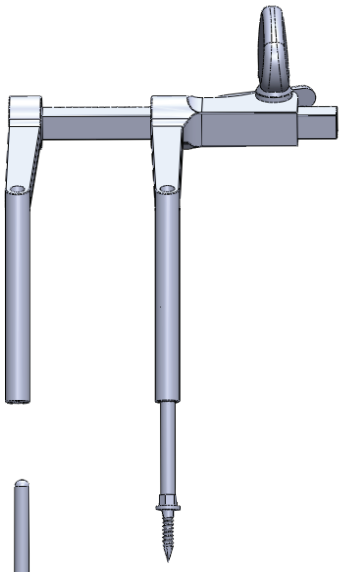
SURGICAL APPROACH AND PREPARATION



The patient is placed in the supine position to utilize an anterior exposure in preparation of anterior cervical intervertebral fusion. The posterior cervical spine should be supported to allow normal lordosis. The surgeon should determine if the approach will be right handed or left handed.

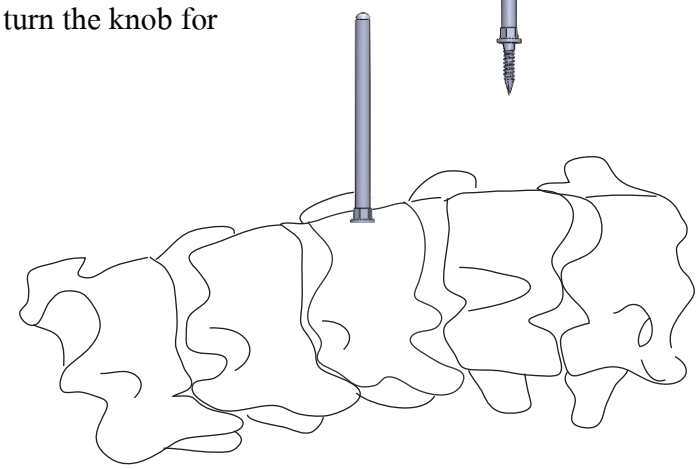
A Transverse or oblique skin incision will be made. Dissection should be made medially between the trachea and esophagus and the carotid sheath, laterally. Handheld retractors may be used for initial exposure of the anterior vertebral column and adjacent longus colli muscles.





DISTRACTION

Insert the Casper vertebral body distractor pins using the distraction pin driver into the adjacent vertebral bodies. Insert the distractor onto the pins and gradually turn the knob for intervertebral distraction.

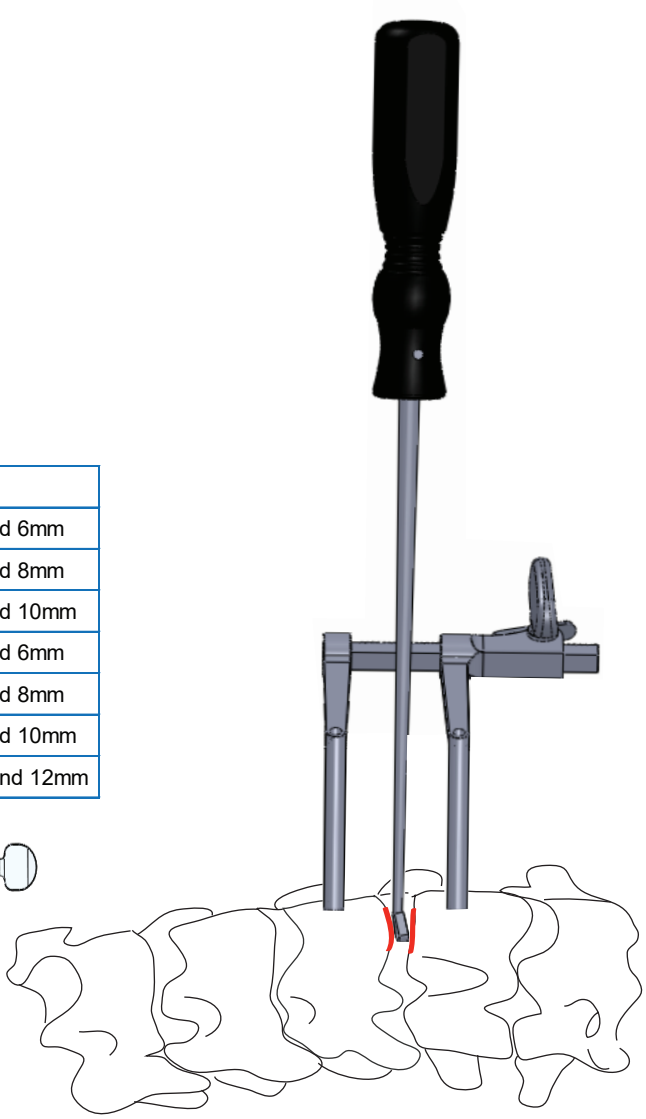


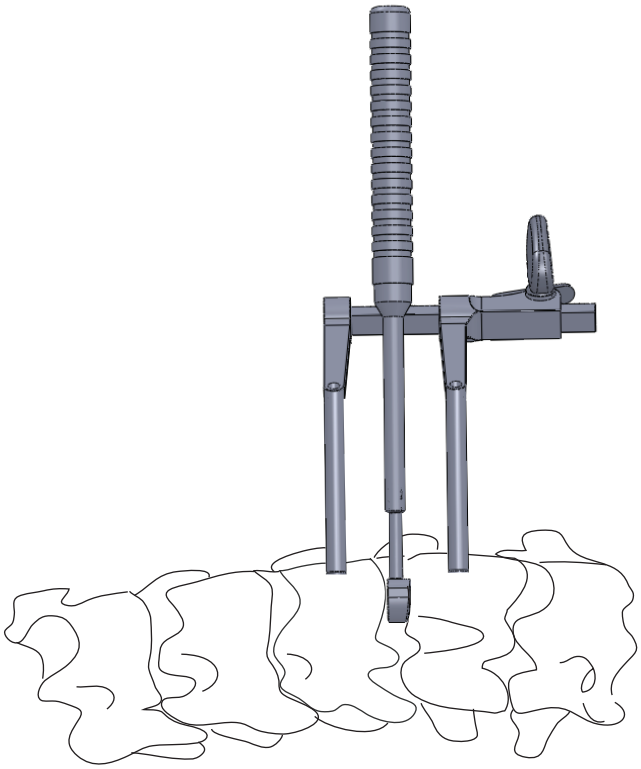
Discectomy/ Endplate Vascularization

Removal of the disc is performed leaving only the lateral and posterior annuli. The superficial layers of cartilaginous is removed to allow exposure of bleeding bone. Do not remove the entire endplate to prevent subsidence or weakening of the construct. The Curette may be used in final surface preparation. A motor driver burr can be used to remove osteophytes.

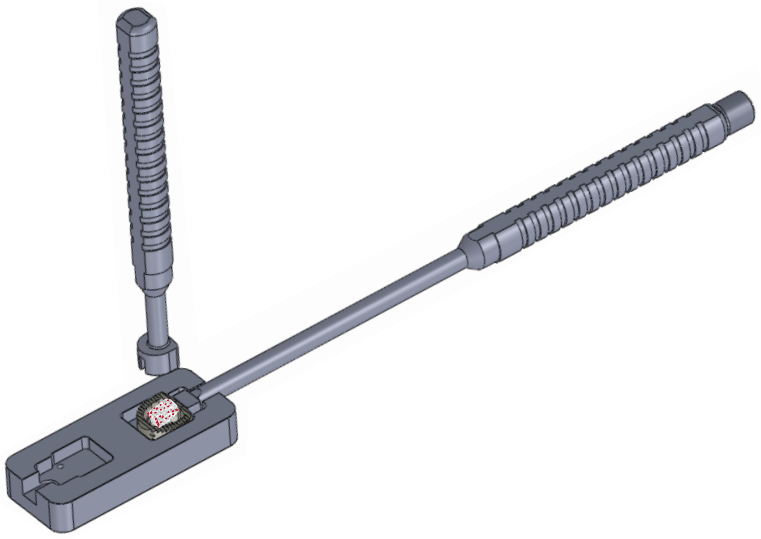
Template for Cervical Spacer	
MS6140506	Template for Cervical Cage, 12.5 mm x 14 mm, 5mm and 6mm
MS6140708	Template for Cervical Cage, 12.5 mm x 14 mm, 7mm and 8mm
MS6140910	Template for Cervical Cage, 12.5 mm x 14 mm, 9mm and 10mm
MS6160506	Template for Cervical Cage, 14.5 mm x 16 mm, 5mm and 6mm
MS6160708	Template for Cervical Cage, 14.5 mm x 16 mm, 7mm and 8mm
MS6160910	Template for Cervical Cage, 14.5 mm x 16 mm, 9mm and 10mm
MS6161112	Template for Cervical Cage, 14.5 mm x 16 mm, 11mm and 12mm







Determine the implant size required by trial fit of the appropriate template that will restore correct lordosis. The templates available are in 1 mm increments and two sizes to allow anatomical restoration of the intervertebral space corresponding to the spacer The template size is marked on the lower side and marked “Top” on the top side for correct orientation during insertion.



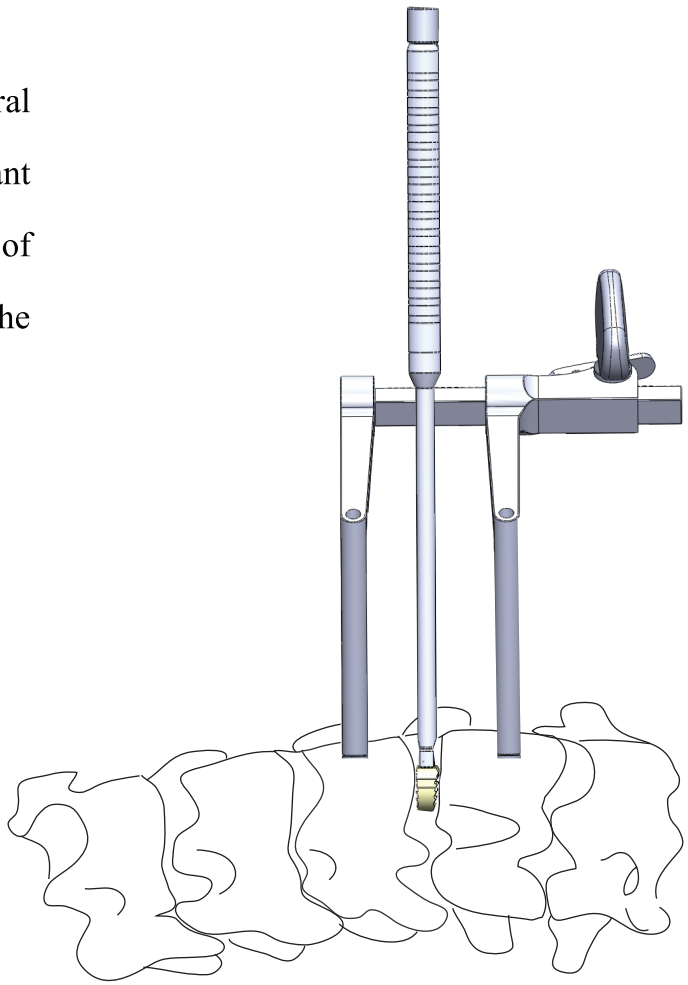
AUTOGENOUS BONE GRAFT

The implant is loaded onto the implant holder and threaded rod. Tighten snugly so the implant is secure against the holder face. Do not over tighten to avoid damaging the holding threads in the peek space. Prior to placement into the intervertebral spacer, autogenous bone is placed into the vertical cavity of the implant. A graft support block sized for the implant profile and the graft compactor are used for compacting bone graft material into the cavity of the implant.

Cervical Spacer Non-Sterile	
MS1115120U	Cervical Spacer, 12.5 mm x 14 mm x 5 mm
MS1116120U	Cervical Spacer, 12.5 mm x 14 mm x 6 mm
MS1117120U	Cervical Spacer, 12.5 mm x 14 mm x 7 mm
MS1118120U	Cervical Spacer, 12.5 mm x 14 mm x 8 mm
MS1119120U	Cervical Spacer, 12.5 mm x 14 mm x 9 mm
MS1110120U	Cervical Spacer, 12.5 mm x 14 mm x 10 mm
MS1115140U	Cervical Spacer, 14.5 mm x 16 mm x 5 mm
MS1116140U	Cervical Spacer, 14.5 mm x 16 mm x 6 mm
MS1117140U	Cervical Spacer, 14.5 mm x 16 mm x 7 mm
MS1118140U	Cervical Spacer, 14.5 mm x 16 mm x 8 mm
MS1119140U	Cervical Spacer, 14.5 mm x 16 mm x 9 mm
MS1110140U	Cervical Spacer, 14.5 mm x 16 mm x 10 mm
MS1111140U	Cervical Spacer, 14.5 mm x 16 mm x 11 mm
MS1112140U	Cervical Spacer, 14.5 mm x 16 mm x 12 mm

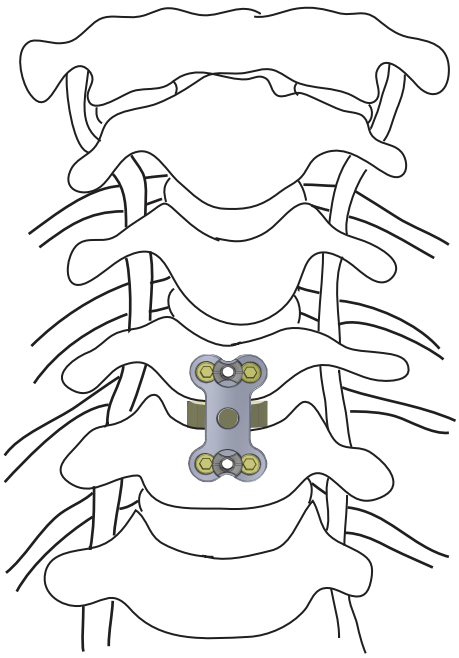
PEEK INTERBODY SPACER INSERTION

Insert the peek interbody spacer into the contralateral disc space using slight impaction so that the implant ridges contact the endplate and the posterior edge of the implant is 2-4 mm beyond the posterior rim of the vertebral body.



Cervical Spacer	
MS1115120	Cervical Spacer, 12.5 mm x 14 mm x 5 mm
MS1116120	Cervical Spacer, 12.5 mm x 14 mm x 6 mm
MS1117120	Cervical Spacer, 12.5 mm x 14 mm x 7 mm
MS1118120	Cervical Spacer, 12.5 mm x 14 mm x 8 mm
MS1119120	Cervical Spacer, 12.5 mm x 14 mm x 9 mm
MS1110120	Cervical Spacer, 12.5 mm x 14 mm x 10 mm
MS1115140	Cervical Spacer, 14.5 mm x 16 mm x 5 mm
MS1116140	Cervical Spacer, 14.5 mm x 16 mm x 6 mm
MS1117140	Cervical Spacer, 14.5 mm x 16 mm x 7 mm
MS1118140	Cervical Spacer, 14.5 mm x 16 mm x 8 mm
MS1119140	Cervical Spacer, 14.5 mm x 16 mm x 9 mm
MS1110140	Cervical Spacer, 14.5 mm x 16 mm x 10 mm
MS1111140	Cervical Spacer, 14.5 mm x 16 mm x 11 mm
MS1112140	Cervical Spacer, 14.5 mm x 16 mm x 12 mm

The Casper vertebral body distractor and pins can now be removed.



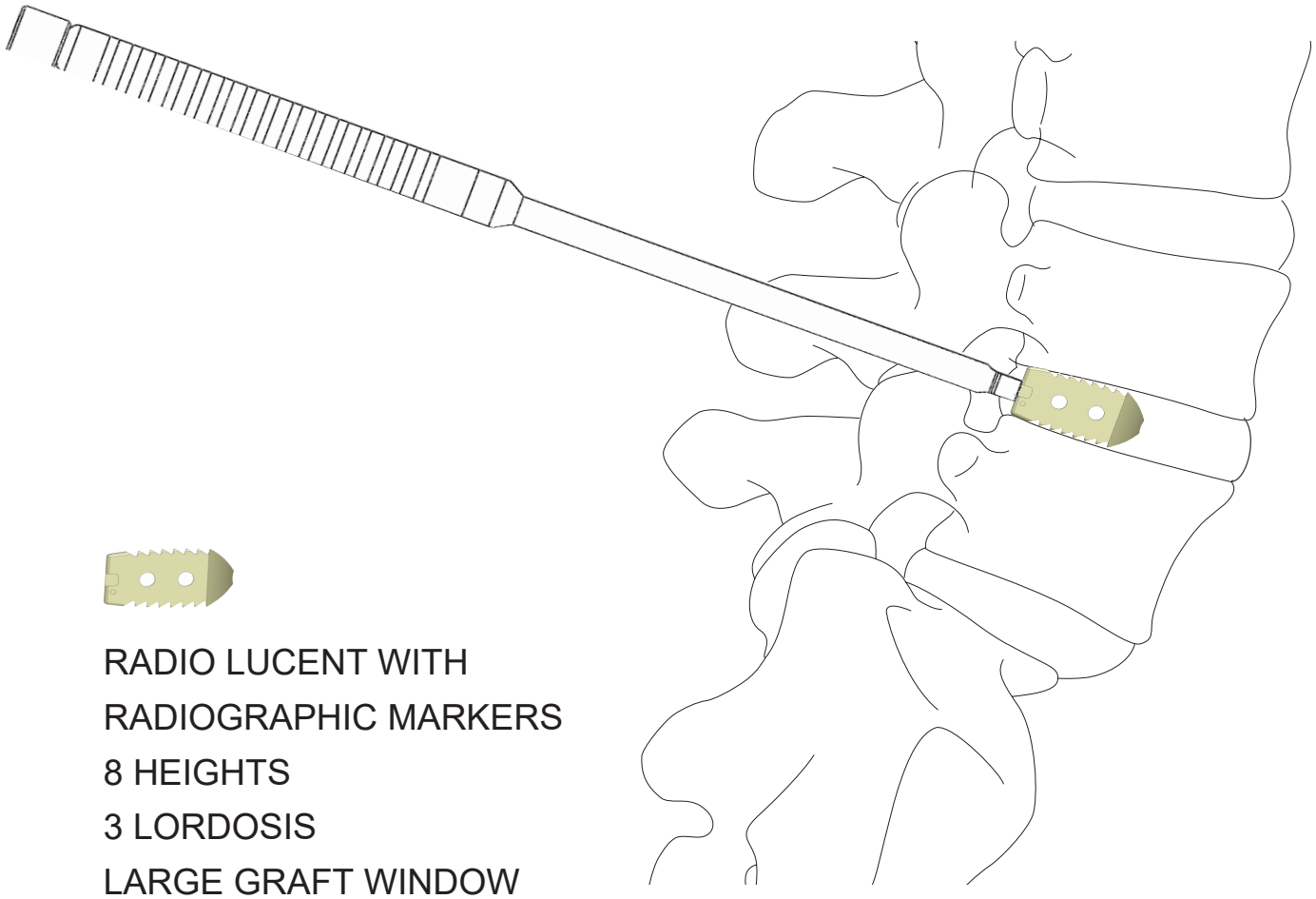
Supplemental fixation using the G Surgical GPS Anterior Cervical Plate is recommended after completion of insertion of the intervertebral cage.

IMPLANTS SIZED TO MATCH VERTEBRAL ANATOMY AND RESTORE LORDOSIS TO THE LUMBAR SPINE

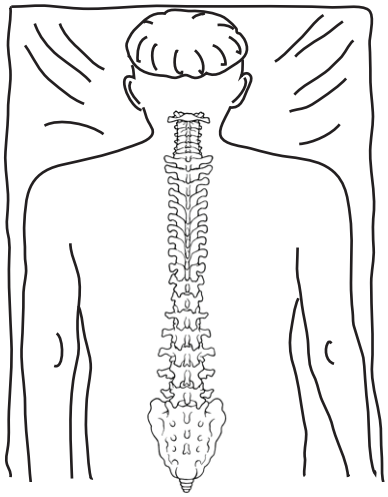
GSURGICAL PEEK SYSTEM

GSURGICAL

POSTERIOR LUMBAR INTERVERTEBRAL SPACER FUSION

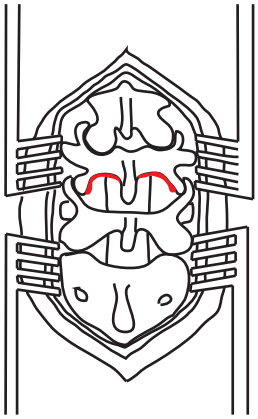


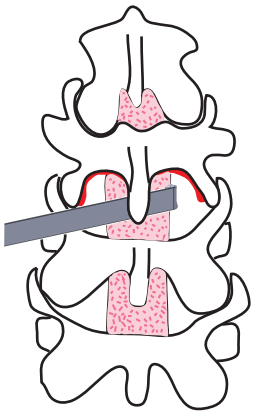
RADIO LUCENT WITH
RADIOGRAPHIC MARKERS
8 HEIGHTS
3 LORDOSIS
LARGE GRAFT WINDOW



POSITIONING AND SURGICAL APPROACH
Position the patient in a prone position on a lumbar frame avoiding abdominal compression. Location of the level to be treated is accomplished using an imaging intensifier screen.

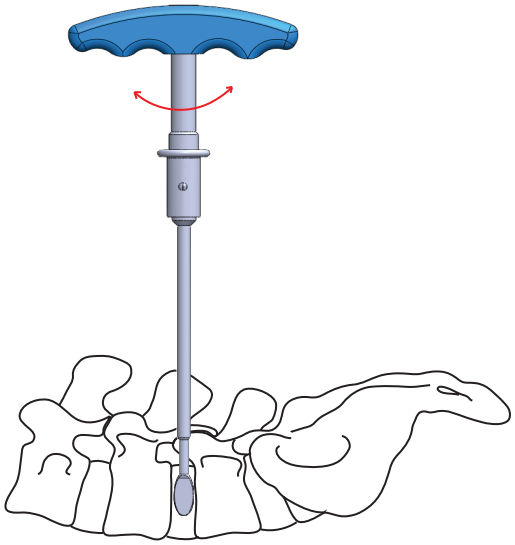
LAMINECTOMY AND FACETETOMY
To gain access to the intervertebral space, exposure of the disc should take in account placement of the implant by performing a bilateral resection of the lower part of the vertebral lamina leaving as much of the facets as possible to preserve stability to the intervertebral segment.





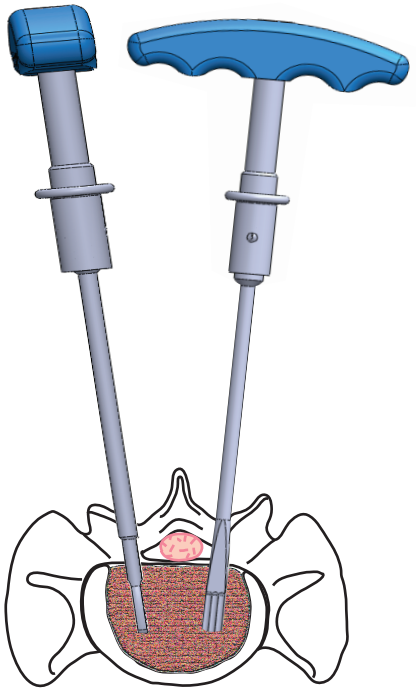
DISCECTOMY
Using the root retractors (large or small), retract the dura medially to expose the posterior part of the disc. Using a # 15 scalpel blade incise the annulus to remove disc material until only anterior and lateral annuli remain.

DISTRACTION
The distractors, 7 mm - 14 mm are used starting with the 7 mm and alternately left to right, to increase the interbody space bilaterally until the required height is obtained. The distractor is inserted into the disc space and rotated 90° to achieve distraction. Posterior fixation using pedicle screws can be inserted at this time to assist in distraction if the surgeon desires.



DISC SPACE PREPARATION

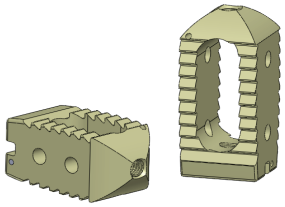
With one distractor remaining in the disc space, remove the disc using reamers and or shavers. The size of the implant will correspond to the distractor, shaver and reamer used. A curette, large or small can be used for both caudal and cephalad end plates until the subchondral bone is exposed providing bleeding bone for graft incorporation.



IMPLANT SELECTION

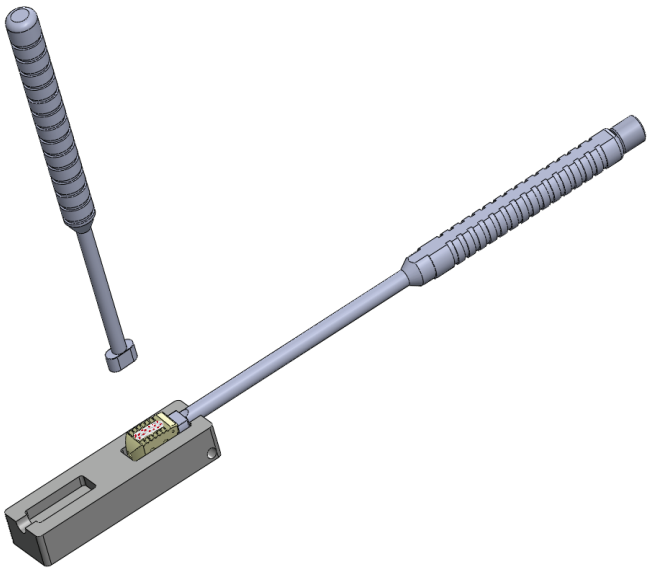
Select the implant corresponding to the distractor, reamer/shaver size used for disc removal also taking note of the insertion depth which is determined by the MM markings on the shaft of the instruments. Implant sizes 7 mm - 14 mm are available in 20 mm and 25 mm lengths and lordosis angles of 0°, 4° and 8°.

Length	Height	Lordotic Angle
20 MM	7 mm - 14 mm	0°
	9 mm - 14 mm	4°
	10 mm - 14 mm	8°
25 MM	7 mm - 14 mm	0°
	9 mm - 14 mm	4°
	10 mm - 14 mm	8°



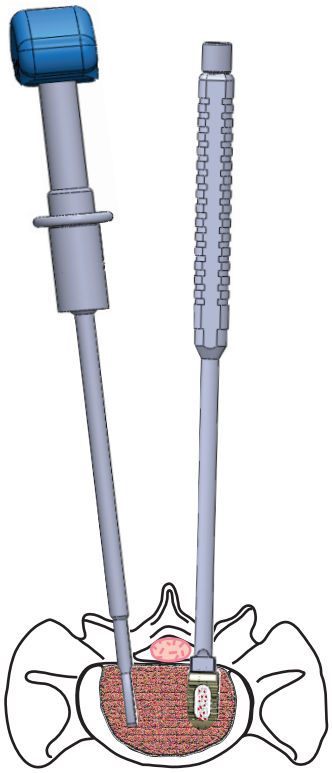
AUTOGENOUS BONE GRAFT

The implant is loaded onto the implant holder and threaded rod. Tighten snugly so the implant is secure against the holder face. Do not over tighten to avoid damaging the holding threads in the implant. Prior to placement into the intervertebral space, autogenous bone is placed into the vertical cavity of the implant. A lumbar cage support block compartmentally sized for the implant size and the graft compactor are used for compacting bone graft material into the cavity of the implant.



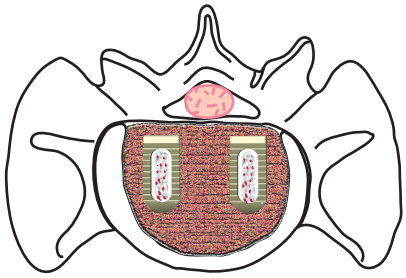
PEEK INTERBODY SPACER INSERTION

Insert the peek interbody spacer into the contralateral disc space using slight impaction so that the implant ridges contact the endplate and the posterior edge of the implant is 2 – 4 mm beyond the posterior rim of the vertebral body.



ADDITIONAL PEEK INTERBODY SPACER

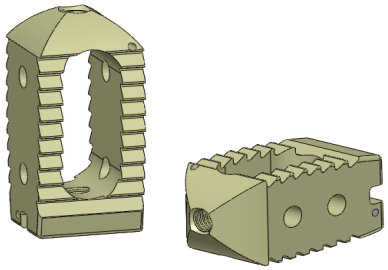
After removal of the distractor from the contralateral side a second spacer may be inserted using the preceding technique. The surgeon can make slight adjustments further anterior or posterior if necessary after viewing using an imaging intensifier screen. The final impactor can be used for positioning more anterior or by reattaching the inserter and slight distraction the implant can be repositioned posteriorly.



SUPPLEMANTAL FIXATION

Supplemental fixation using the G Surgical GPS Pedicle Screw System is recommended after completing insertion of the interbody spacers.

Lumbar Spacer 20 mm	
MS4127200	Lumbar Spacer 7 mm x 20 mm x 0°
MS4128200	Lumbar Spacer 8 mm x 20 mm x 0°
MS4129200	Lumbar Spacer 9 mm x 20 mm x 0°
MS4120200	Lumbar Spacer 10 mm x 20 mm x 0°
MS4121200	Lumbar Spacer 11 mm x 20 mm x 0°
MS4122200	Lumbar Spacer 12 mm x 20 mm x 0°
MS4123200	Lumbar Spacer 13 mm x 20 mm x 0°
MS4124200	Lumbar Spacer 14 mm x 20 mm x 0°
MS4129204	Lumbar Spacer 9 mm x 20 mm x 4°
MS4120204	Lumbar Spacer 10 mm x 20 mm x 4°
MS4121204	Lumbar Spacer 11 mm x 20 mm x 4°
MS4122204	Lumbar Spacer 12 mm x 20 mm x 4°
MS4123204	Lumbar Spacer 13 mm x 20 mm x 4°
MS4124204	Lumbar Spacer 14 mm x 20 mm x 4°
MS4120208	Lumbar Spacer 10 mm x 20 mm x 8°
MS4121208	Lumbar Spacer 11 mm x 20 mm x 8°
MS4122208	Lumbar Spacer 12 mm x 20 mm x 8°
MS4123208	Lumbar Spacer 13 mm x 20 mm x 8°
MS4124208	Lumbar Spacer 14 mm x 20 mm x 8°
Lumbar Spacer 25 mm	
MS4127250	Lumbar Spacer 7 mm x 25 mm x 0°
MS4128250	Lumbar Spacer 8 mm x 25 mm x 0°
MS4129250	Lumbar Spacer 9 mm x 25 mm x 0°
MS4120250	Lumbar Spacer 10 mm x 25 mm x 0°
MS4121250	Lumbar Spacer 11 mm x 25 mm x 0°
MS4122250	Lumbar Spacer 12 mm x 25 mm x 0°
MS4123250	Lumbar Spacer 13 mm x 25 mm x 0°
MS4124250	Lumbar Spacer 14 mm x 25 mm x 0°
MS4129254	Lumbar Spacer 9 mm x 25 mm x 4°
MS4120254	Lumbar Spacer 10 mm x 25 mm x 4°
MS4121254	Lumbar Spacer 11 mm x 25 mm x 4°
MS4122254	Lumbar Spacer 12 mm x 25 mm x 4°
MS4123254	Lumbar Spacer 13 mm x 25 mm x 4°
MS4124254	Lumbar Spacer 14 mm x 25 mm x 4°
MS4120258	Lumbar Spacer 10 mm x 25 mm x 8°
MS4121258	Lumbar Spacer 11 mm x 25 mm x 8°
MS4122258	Lumbar Spacer 12 mm x 25 mm x 8°
MS4123258	Lumbar Spacer 13 mm x 25 mm x 8°
MS4124258	Lumbar Spacer 14 mm x 25 mm x 8°

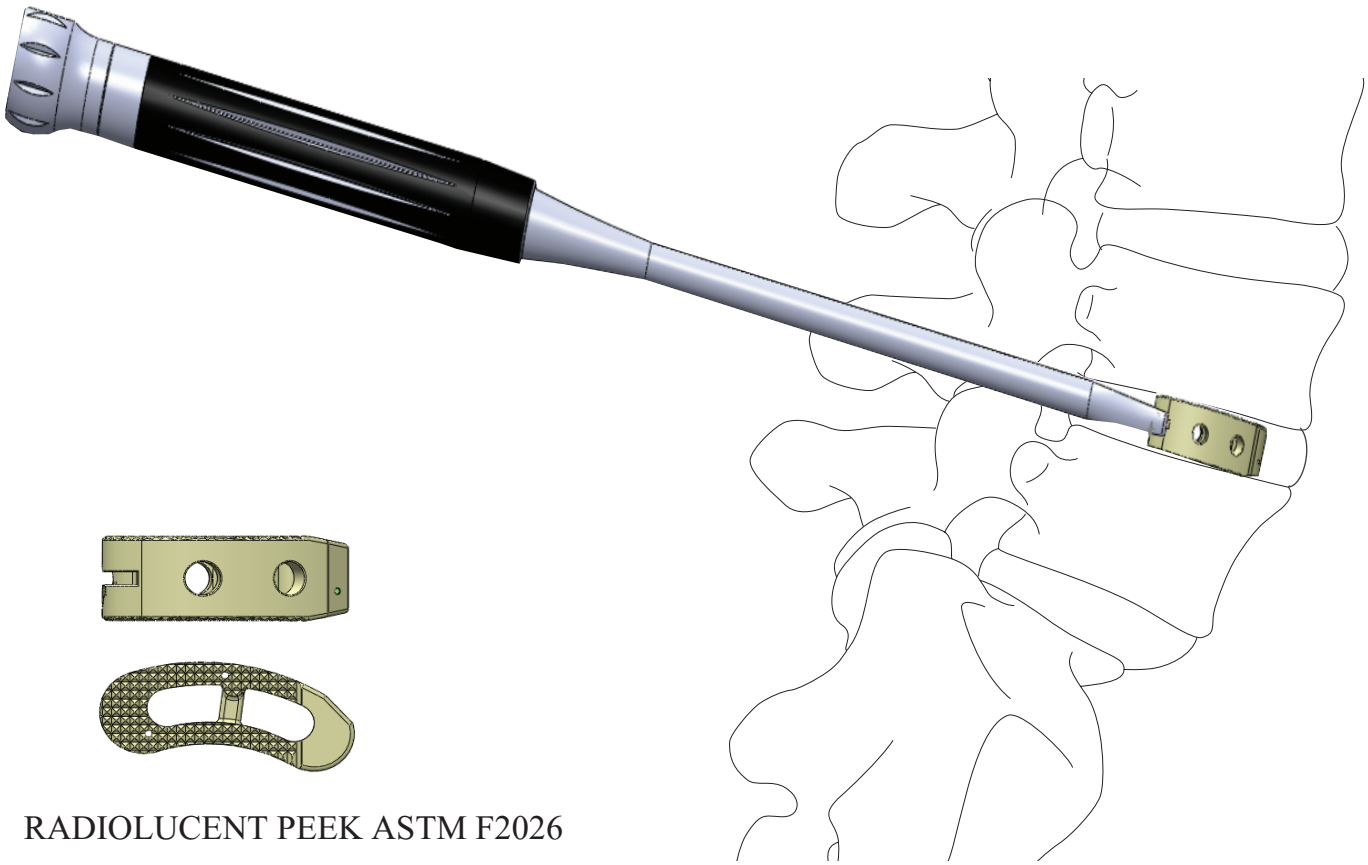


IMPLANTS SIZED TO MATCH VERTEBRAL ANATOMY AND TRANSFORAMINAL POSTERIOR INTERBODY FUSION

G SURGICAL PEEK SYSTEM

G SURGICAL

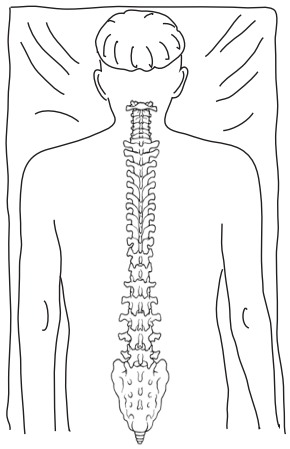
TRANSFORAMINAL LUMBAR INTERVERTEBRAL SPACER FUSION



RADIOLUCENT PEEK ASTM F2026
28 MM AND 32 MM LENGTHS
9 HEIGHTS
0° AND 6° LORDOSIS
LARGE GRAFT WINDOWS
X-RAY MARKERS FORM “H” IMAGE SAGITAL VIEW

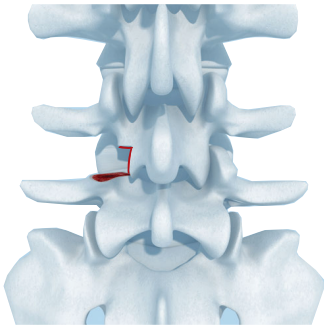
POSITIONING AND SURGICAL APPROACH

The patient is positioned as required avoiding abdominal compression. Location of the level to be treated is accomplished using an imaging intensifier screen.

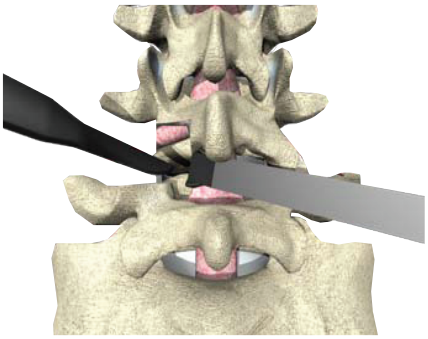


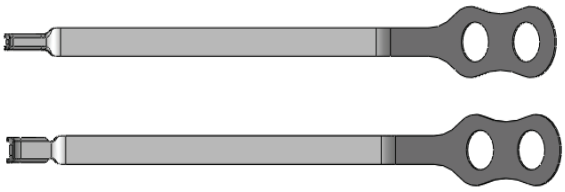
LAMINECTOMY AND FACETECTOMY

Perform a standard open incision at the symptomatic side of the desired segment to allow retraction of the muscle layer. Use an osteotome to prepare a window removing the inferior facet of the cranial vertebra and superior facet of the caudal vertebra. The bone chips can be used for later filling the implant cavities.



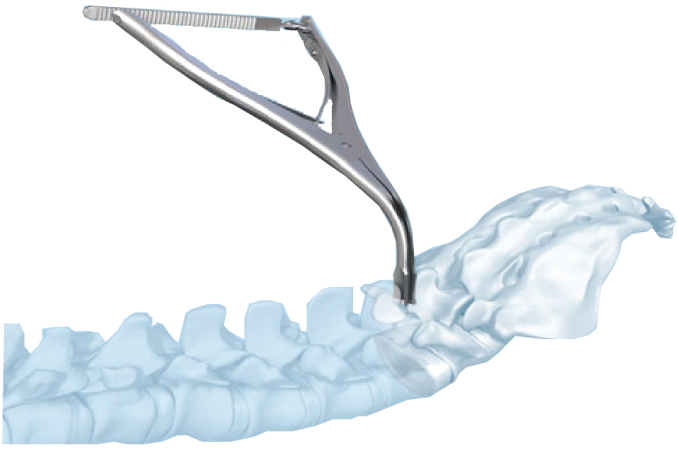
Root retractors, small and large, are available in the instrument set for protecting during the procedure. Use a #15 scalpel to cut a window in the annulus





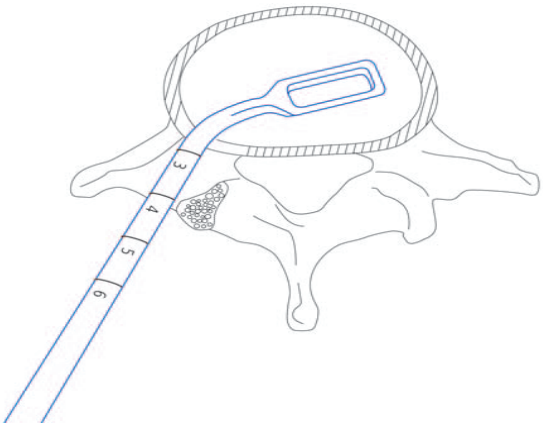
DISTRACTION

Distraction can be accomplished with the Laminar Spreader directly on the pedicle screws to open the disc space and allow exposure for decompression and implant selection.



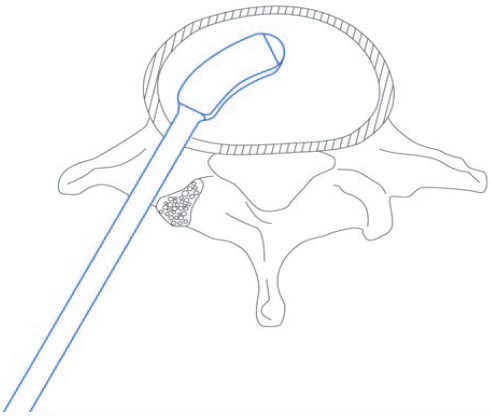
DISC SPACE PREPRATION

Straight and curved curettes and rasp are available for removal of disc material and expose bleeding bone.



DETERMINING IMPLANT SIZE

Select an appropriate size trial to assess the interbody space via the transforaminal window with gentle impaction. Each trail has reference markings to identify height length and lordosis. An image intensifier can be utilized to check position.

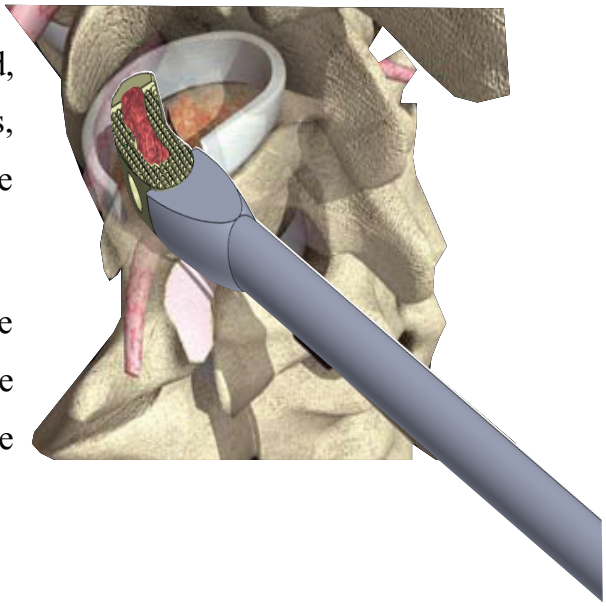


ASSEMBLE IMPLANT TO DRIVER

Select the appropriate size implant that corresponds to the trail size and install on the TLIF Spacer Inserter by threading into the implant. The cavity of the TLIF spacer can be filled with autologous bone chips and the impactor can be used to pack bone chips into the implant.



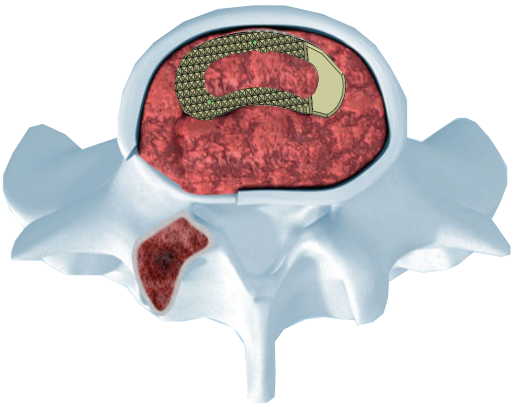
IMPLANT INSERTION



Once the implant is filled and bone chips compacted, introduce the TLIF spacer between the prepared endplates, unscrew the threaded rod, nudge the implant gently and the implant will articulate into position.

There should be about 6-8 mm of space posterior to the anterior edge of the adjacent vertebral bodies. An image intensifier may be used to verify the AP spacer relative to the vertebral body.

FILL THE POSTERIOR SPACE



Use cancellous bone autograft to fill the remaining disc space.

POSTERIOR FIXATION



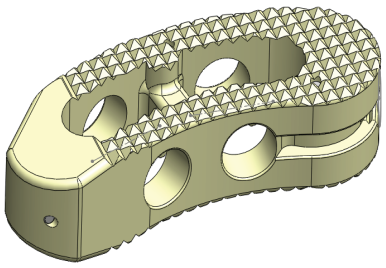
Additional fixation is recommended using G Surgical Posterior Lumbar pedicle screws and rods to enhance biomechanical stability.

TLIF Spacer 28 mm

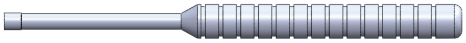
MS0072800	TLIF Spacer 7 mm x 28 mm x 0°
MS0082800	TLIF Spacer 8 mm x 28 mm x 0°
MS0092800	TLIF Spacer 9 mm x 28 mm x 0°
MS0102800	TLIF Spacer 10 mm x 28 mm x 0°
MS0112800	TLIF Spacer 11 mm x 28 mm x 0°
MS0122800	TLIF Spacer 12 mm x 28 mm x 0°
MS1372800	TLIF Spacer 13 mm x 28 mm x 0°
MS1472800	TLIF Spacer 14 mm x 28 mm x 0°
MS1572800	TLIF Spacer 15 mm x 28 mm x 0°
MS0082806	TLIF Spacer 8 mm x 28 mm x 6°
MS0092806	TLIF Spacer 9 mm x 28 mm x 6°
MS0102806	TLIF Spacer 10 mm x 28 mm x 6°
MS0112806	TLIF Spacer 11 mm x 28 mm x 6°
MS0122806	TLIF Spacer 12 mm x 28 mm x 6°
MS0132806	TLIF Spacer 13 mm x 28 mm x 6°
MS0142806	TLIF Spacer 14 mm x 28 mm x 6°
MS0152806	TLIF Spacer 15 mm x 28 mm x 6°

TLIF Spacer 32 mm

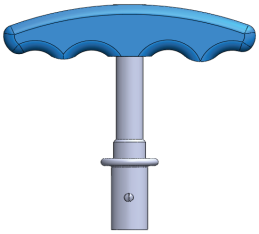
MS0073200	TLIF Spacer 7 mm x 32 mm x 0°
MS0083200	TLIF Spacer 8 mm x 32 mm x 0°
MS0093200	TLIF Spacer 9 mm x 32 mm x 0°
MS0103200	TLIF Spacer 10 mm x 32 mm x 0°
MS0113200	TLIF Spacer 11 mm x 32 mm x 0°
MS0123200	TLIF Spacer 12 mm x 32 mm x 0°
MS0133200	TLIF Spacer 13 mm x 32 mm x 0°
MS0143200	TLIF Spacer 14 mm x 32 mm x 0°
MS0153200	TLIF Spacer 15 mm x 32 mm x 0°
MS0083206	TLIF Spacer 8 mm x 32 mm x 6°
MS0093206	TLIF Spacer 9 mm x 32 mm x 6°
MS0103206	TLIF Spacer 10 mm x 32 mm x 6°
MS0113206	TLIF Spacer 11 mm x 32 mm x 6°
MS0123206	TLIF Spacer 12 mm x 32 mm x 6°
MS0133206	TLIF Spacer 13 mm x 32 mm x 6°
MS0143206	TLIF Spacer 14 mm x 32 mm x 6°
MS0153206	TLIF Spacer 15 mm x 32 mm x 6°



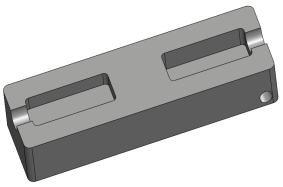
G Surgical Posterior Lumbar Intervertebral Fusion Instruments are manufactured from surgical grade stainless steel with laser engraving for easy identification and silk screen graphics for easy placement of the instruments into the autoclavable case



MS6010043 Graft Compactor



MS6010003 Quick T Handle



MS6010040 Lumbar Cage Support



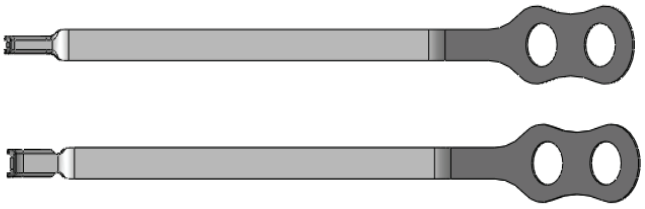
MS6010021 Distractor 7 mm
MS6010048 Distractor 8 mm
MS6010049 Distractor 9 mm
MS6010050 Distractor 10 mm
MS6010051 Distractor 11 mm
MS6010052 Distractor 12 mm
MS6010053 Distractor 13 mm
MS6010054 Distractor 14 mm



MS6010037 Final Impactor



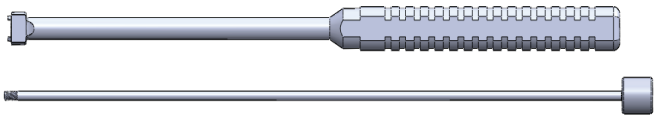
MS6010030 Shaver 8 mm
MS6010031 Shaver 9 mm
MS6010032 Shaver 10 mm
MS6010033 Shaver 11 mm
MS6010034 Shaver 12 mm
MS6010035 Shaver 13 mm
MS6010036 Shaver 14 mm



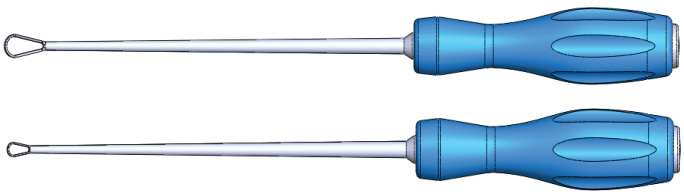
MS6010044 Small Root Retractor
MS6010047 Larger Root Retractor



MS6010029 Reamer 7 mm
MS6010022 Reamer 8 mm
MS6010023 Reamer 9 mm
MS6010024 Reamer 10 mm
MS6010025 Reamer 11 mm
MS6010026 Reamer 12 mm
MS6010027 Reamer 13 mm

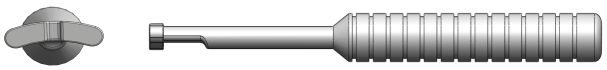


MS601005 Cage Holder
MS601005-1 Threaded Rod for Cage Holder

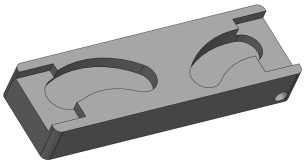


MS6010041 Large Currette
MS6010042 Small Currette

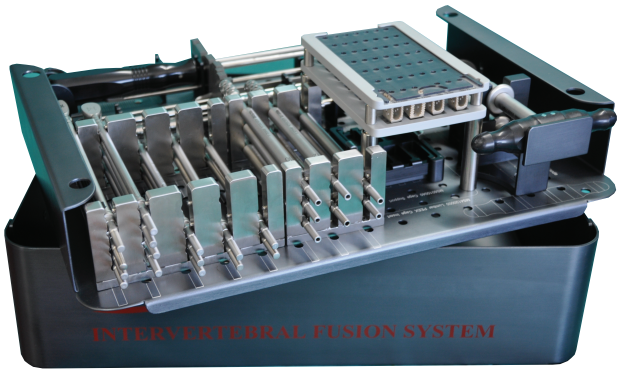
G Surgical Transforaminal Lumbar Intervertebral Fusion Instruments are manufactured from surgical grade stainles steel with laser engraving for easy identification and silk screen graphics for easy placement of the instruments into the autoclavable case.



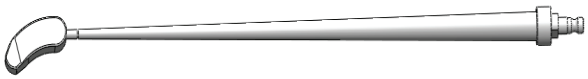
MS6010086 Graft Compactor, Small TLIF
MS6010087 Graft Compactor, Large TLIF



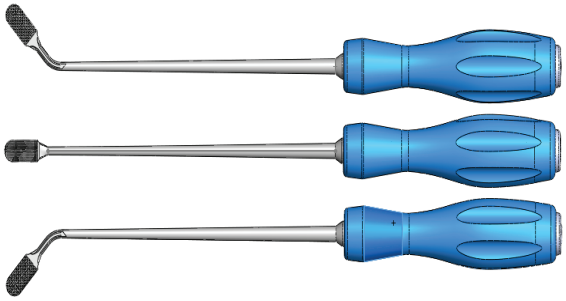
MS6010097 Cage Support TLIF



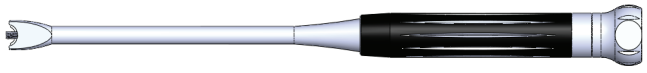
MS701060 PEEK Trial and Caddy, Non-Sterile
MS6010000 Instrument Case



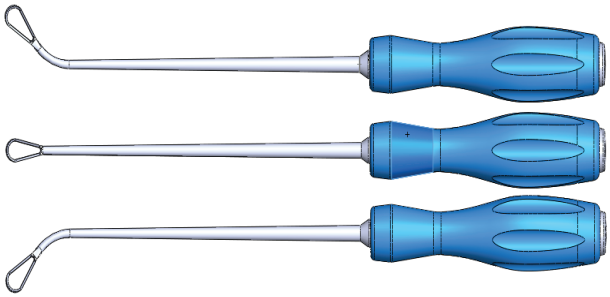
MS6010088 Trial 7 mm x 0°
MS6010089 Trial 8 mm x 0°
MS6010090 Trial 9 mm x 0°
MS6010091 Trial 10 mm x 0°
MS6010092 Trial 11 mm x 0°
MS6010093 Trial 12 mm x 0°
MS6010094 Trial 13 mm x 0°
MS6010095 Trial 14 mm x 0°
MS6010096 Trial 15 mm x 0°



MS6010098 Bone Rasp
MS6010098R Bone Rasp Right
MS6010098L Bone Rasp Left



MS6010099 Lumbar TLIF Spacer Inserter
MS6010099-1 Lumbar TLIF Threaded Rod



MS6010041 Large Curette
MS6010041R Large Currette, Right
MS6010041L Larage Curette, Left