DePuy Synthes
SPINE
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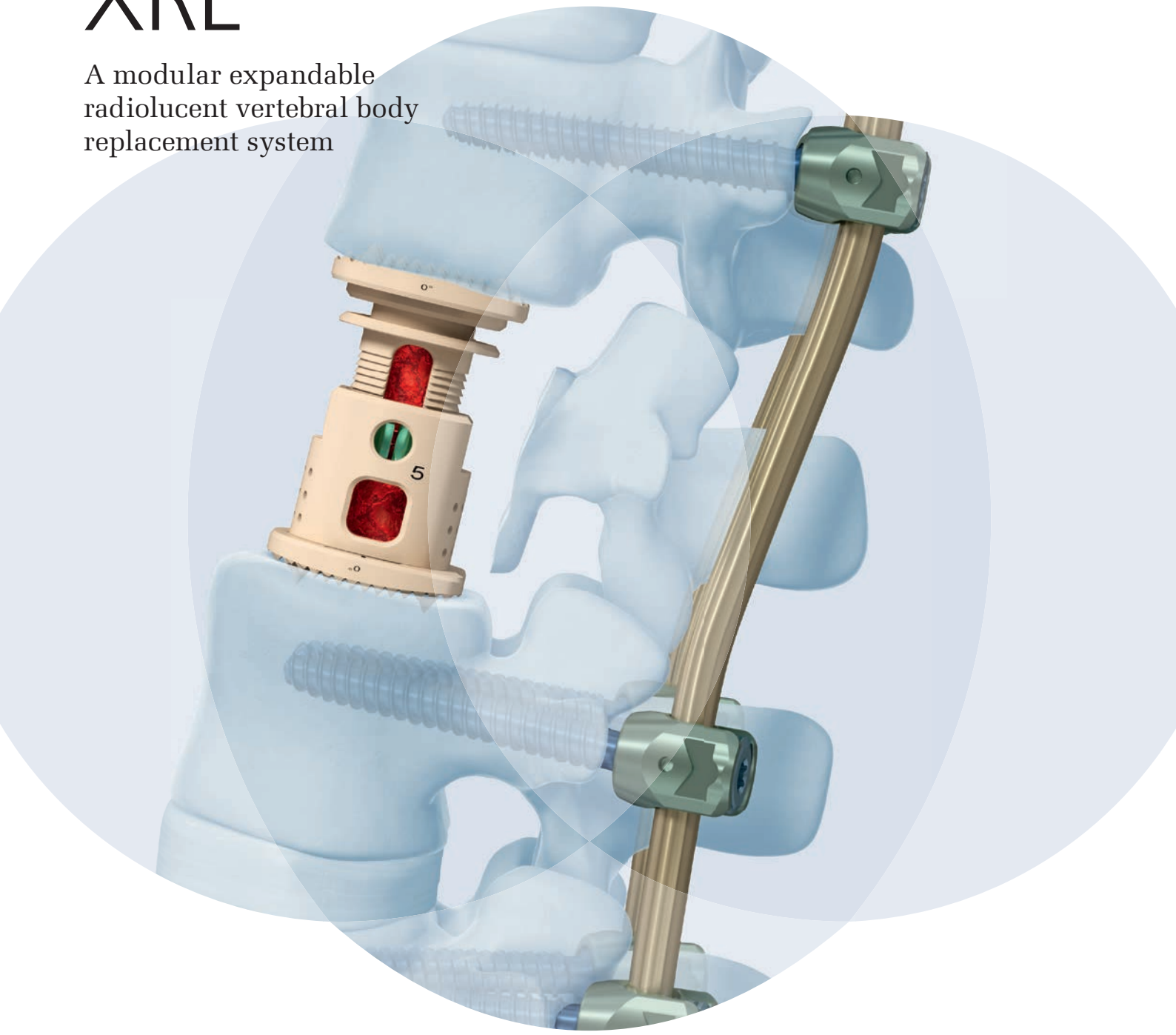
XRL

A modular expandable radiolucent vertebral body replacement system



This publication is not intended for distribution in the USA.

SURGICAL TECHNIQUE

Table of Contents


Image intensifier control

Warning
This description alone does not provide sufficient background for direct use of the instrument set. Instruction by a surgeon experienced in handling these instruments is highly recommended.

Reprocessing, Care and Maintenance of Synthes Instruments
For general guidelines, function control and dismantling of multi-part instruments, please contact your local sales representative or refer to: www.synthes.com/reprocessing

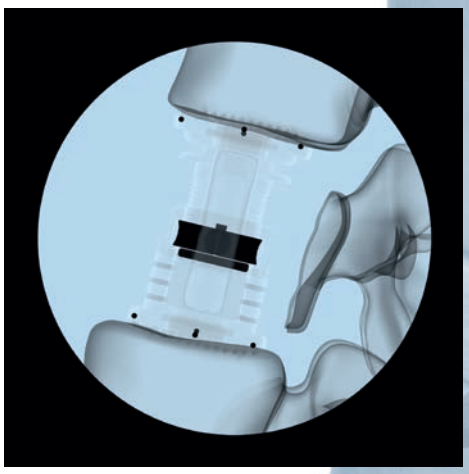
XRL. A modular expandable radiolucent vertebral body replacement system.

XRL provides surgeons the ability to expand the device in situ to reconstruct the anterior column, restore height, and correct the sagittal curvature of the thoracolumbar spine.

- Modular construction
- Multiple approach options
- Tactile feedback during expansion
- Various implant options to accommodate a wide range of anatomies

Material

- PEEK material offers the benefit of radiolucent imaging, so surgeons can better assess fusion progress and/or tumor recurrence.
- Modulus of elasticity of PEEK is approximately between cancellous and cortical bone to aid in stress distribution and load sharing.



Implant Options

Modular – Flexible use
The modular implant consists of a central body on which two endplates are attached.

- Central body
  The octagonal shape permits various approach options
- Endplates
  Numerous footprints and angles allow the implant to conform to a wide range of patient anatomies
- Endplate screw
  Rigidly secures the endplate to the central body

Integrated (no assembly required)
Optimal for procedures where low profile constructs are needed.

Self-locking expansion mechanism
Distracts and locks in 1 mm increments.

Open architecture
The open central body and endplate design allow generous placement of bone graft.

- Implant cannulation
  8.4 mm diameter

Instrumentation

One instrument provides:
– Holding and insertion
– Distraction/locking
– Repositioning of implant, if needed

Ratchet and continuous expansion options for tactile feedback
– Precision control during implant insertion
– Scale indicates the amount of distraction achieved

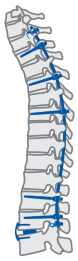
Handle repositioning prior to insertion for intraoperative visualization

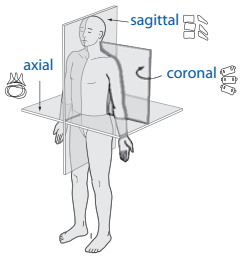
Approach Options
– Anterior (1)
– Anterolateral (2)
– Lateral (3)
– Posterolateral (4)

AO Spine Principles

The four principles to be considered as the foundation for proper spine patient management underpin the design and delivery of the Curriculum: Stability – Alignment – Biology – Function.

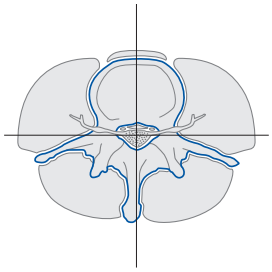
Stability
Stabilization to achieve a specific therapeutic outcome

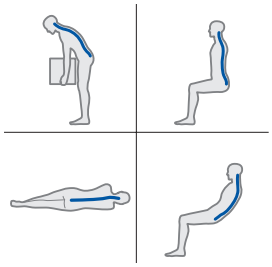




Alignment
Balancing the spine in three dimensions

Biology
Etiology, pathogenesis, neural protection, and tissue healing





Function
Preservations and restoration of function to prevent disability

Indications and Contraindications

XRL serves as a replacement for injured vertebral bodies to stabilize the anterior thoracic and lumbar spine (Th3-L5). The approach can be anterior, anterolateral, lateral or posterolateral.

Depending on the pathological situation, a defect height of 22 mm to 142 mm can be corrected, allowing XRL to be used for one and two level vertebral body defects.

Indications
- Fractures with destruction of the anterior column in the thoracic and lumbar spine
- Post traumatic malalignment
- Replacement of vertebral bodies following tumor resection in the thoracic and lumbar spine
- Reconstruction of the anterior column following an infection

Contraindications
- For sole anterior treatment of advanced osteoporosis. In this case an additional dorsal treatment should be carried out in addition to the anterior treatment
- Diffuse spinal tumors
- In the absence of intact neighboring segments

Notes:
- As with all vertebral body replacement systems, XRL is not suitable as a stand-alone device, and must be used together with an internal fixation system (such as ArcoFix, MATRIX or USS Fracture) to absorb compression forces, tensile forces and torsional moments.
- Additional internal fixation system must not be removed before solid bony fusion occurs.

Preparation

1
Access

Various approaches are suitable depending on the affected spinal level involved.

The following surgical technique is described using a lateral approach from the left at L1. As with all vertebral body replacement systems, preoperative planning is always required to ascertain that the implant matches the patient specific anatomy.

Note: The optimal approach respecting the patient specific situation has to be established by the surgeon.

2
Perform corpectomy

Perform a partial or complete corpectomy as required. Remove the superficial layers of the entire cartilaginous endplates and expose bleeding bone.

Note: Excessive removal of subchondral bone may weaken the vertebral endplate. If the entire endplate is removed, subsidence and a loss of segmental stability may occur.

Insert Trial Implant

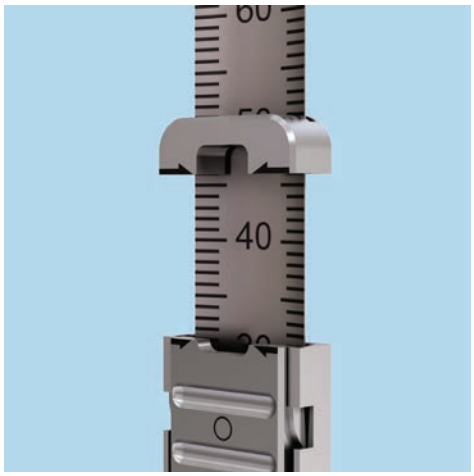
The XRL Vertebral Body Replacement contains a complete line of central body and endplate trial implants that correspond to each central body and endplate implant. Trials are placed into the corpectomy site intraoperatively to determine the appropriate endplate footprint, angle, and central body height.

1
Determine defect

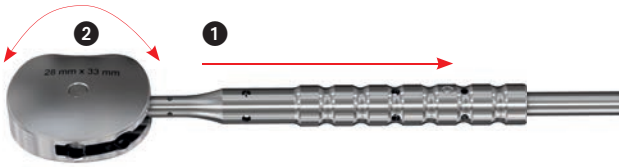
Instrument	
03.661.010	Metal Tape Gauge

The metal tape gauge can be used to determine the overall defect.

Note: If the corpectomy height is less than 34 mm, then proceed to step 4 of this section and use the integrated trials.



2
Select endplate footprint size and angle



Instruments

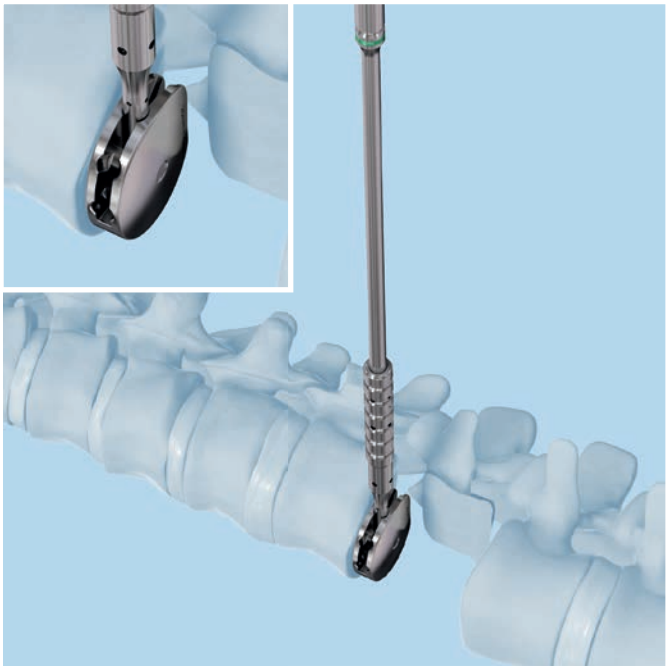
XRL Medium Endplate Trials Instrument for Footprint

03.807.364	21 mm round
03.807.365	21 mm × 24 mm
03.807.366	26 mm × 30 mm

The endplate footprint trial can be adjusted to represent the desired approach. Pull the sleeve ❶ and turn the endplate trial to the desired position ❷. Release the sleeve to lock the position of the trial.

Determine the footprint using the endplate footprint trial. Determine the angle using lateral x-ray imaging.

Note: Make sure that the endplates contact the maximum area of the neighboring vertebral bodies but do not project over the edge.



3
Determine central body size

The optimal central body height is calculated using endplate trial height which is found on the back of the module lid for reference. The trials do not account for the implant spikes (1); therefore, 1 mm clearance on each end of the trial is required.

Optimal Central Body Height (CBH) = Overall defect – Cranial trial endplate height – Caudal trial endplate height – Clearance for spikes

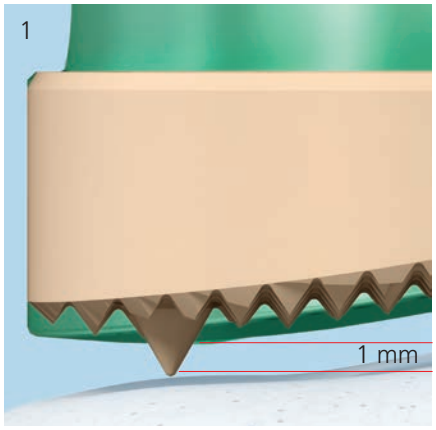
Example for 46 mm defect with a 5° cranial endplate and 10° caudal endplate:

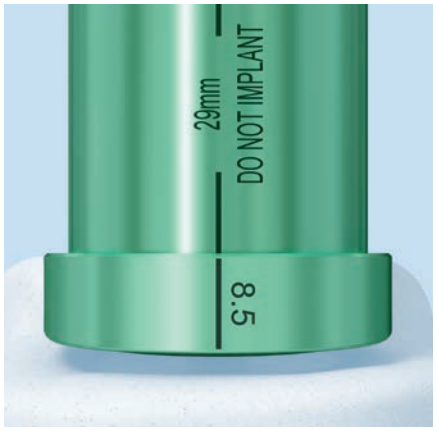
CBH = 46 mm – 6.5 mm – 8.5 mm – 2 mm
CBH = 29 mm

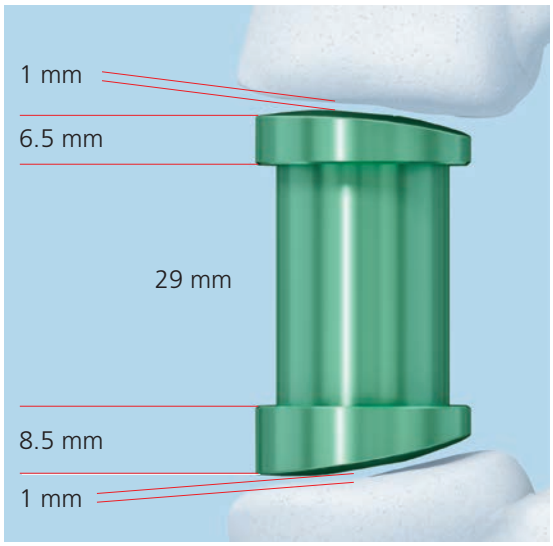
Insert the selected trial endplates onto the trial central body. Align the etch lines before pressing the components together. Ensure there is no gap between the endplate and central body trial.

Note: The endplate height is independent of the footprint.

Warning: The trials are not for implantation and must be removed before insertion of the XRL implant.







Medium Endplate Trial	
Angle	Height (mm)
0°	5
5°	6.5
10°	8.5
15°	10.5
–5°	6.5
–10°	8.5

See page 28 for endplate and central body cross reference list.

4
Insert trial

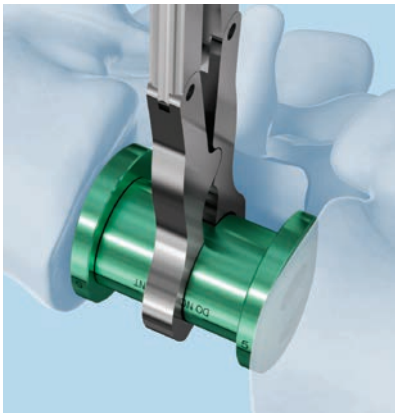
Instrument	
03.807.382	XRL Medium Implant Holder

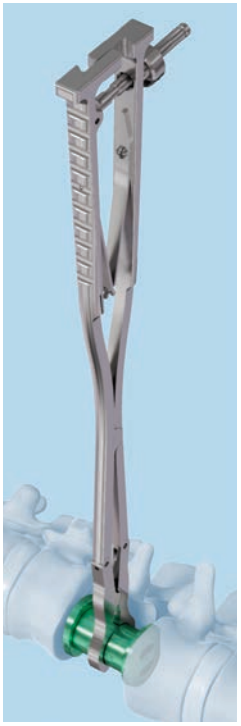
Using the implant holder, insert the trial into the corpectomy site. Be sure the appropriate endplate is oriented in the cranial/caudal position and the etch lines on the trial are facing anterior. The optimal position for the trial is centered on the vertebral bodies with clearance to account for the implant spikes. Trials must always be securely held while in the wound.

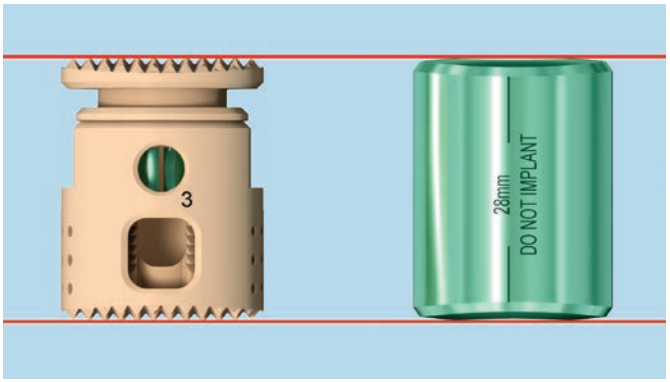
Note: Integrated implants do not have tall spikes and therefore the integrated trials are the same height as the corresponding collapsed implant.

Change trial central body and endplates as necessary to achieve the optimal height, angle, and footprint.

Warning: Do not excessively impact on trial implants and or implant holder. Use light impaction only.







1
Assemble implant

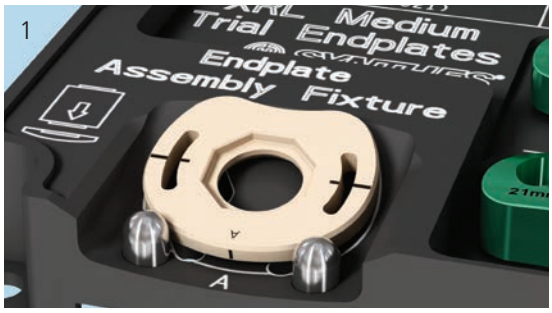
Select implant based on corresponding trial (see pages 27–28 for trial/implant list).

If an integrated assembly is selected, skip to step 4, Prepare implant.

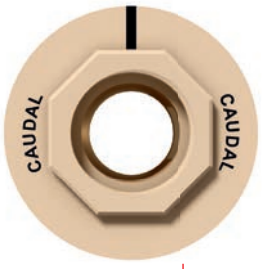
The Endplate Assembly Fixture is found in the Trial Endplate Module. When assembling the implant, orient the caudal endplate into the endplate assembly fixture spike side down, aligning the "A" (Anterior) on the endplate with the "A" on the endplate assembly fixture (1). Position the central body with the locking ring facing the direction of the desired approach (2). Attach the caudal endplate first by pressing the endplate onto the octagon until fully seated. Repeat with the cranial endplate.

Note: The etch lines on the ends of the central body, the graft window, and the locking ring may all be used to indicate the direction of approach. Figure 3 shows the orientation of the etch line with respect to the caudal endplate for each approach option.

1

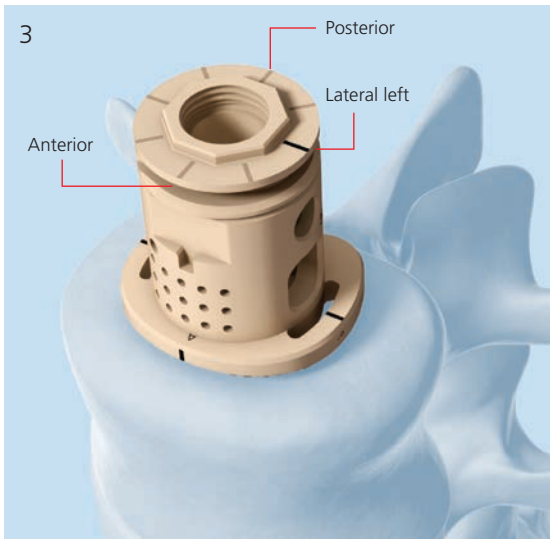


2



Shown: Lateral left approach

3

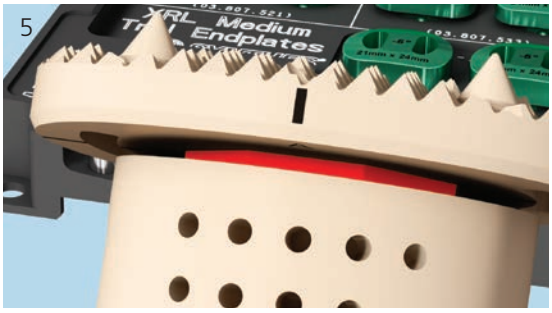


The etch line on the anterior aspect of the endplate ensures that both endplates are in the same direction (lateral left shown in Figure 4).

Warning:
- When pressing on the endplates, ensure the endplate properly seats on the central body. This can be checked visually (5). If the endplate is not properly seated, there is a risk that it could detach from the central body.
- The XRL central body must never be implanted without cranial and caudal endplates properly secured with endplate screws (See step 3, Attach endplate screws).

4

5



2
Reposition endplates (optional)

Instrument	
03.807.354	XRL Endplate Removal Tool

If necessary, the endplates can be repositioned by manually removing them from the central body, except for the round endplates which are removed using the XRL endplate removal tool. Be sure to perform endplate removal over a sterile table.

Warning: Endplates release from central body abruptly. Make sure to have a firm grip on both the central body and the endplate during removal.

To remove round endplates, align the tip of the XRL endplate removal tool with the slot in the endplate. Apply a slight, constant pressure and rotate the tool to release the endplate.

3
Attach endplate screws

Instruments	
03.807.351	XRL Medium Endplate Screwdriver Tip
03.807.357	XRL Medium Torque Limiting Handle

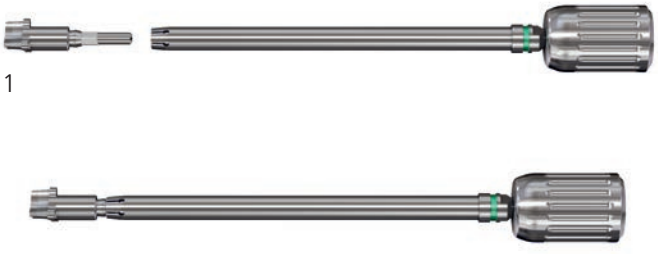
Align the endplate screwdriver tip into the open end of the torque limiting handle (1).

Press until an audible “click” is heard.

Align the tri-lobal feature of the tip and the etchings on the endplate screw. Lightly press the screw onto the screwdriver tip. The screwdriver tip will retain the screw (2).

Align the torque limiting handle with the central body to prevent cross threading. While gripping the large end of the torque limiting handle, rotate the torque limiting handle clockwise to advance the screw through the caudal endplate and into the central body. Tighten until an audible “click” in the torque limiting handle is heard. Repeat this step to fixate the cranial endplate (3).

Note: Please follow torque limiting handle calibration instructions to ensure proper functionality.

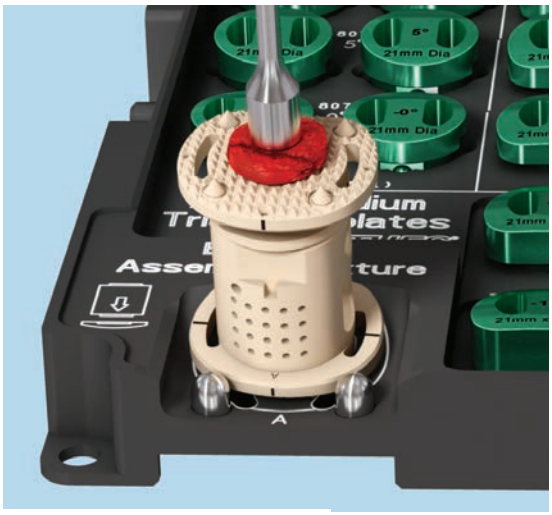


4
Prepare implant

Instruments	
03.807.374	XRL Medium Cancellous Bone Graft Packing Preparation Tamp

Prior to implanting, use the graft packing preparation tamp to facilitate packing of bone graft into the XRL implant. Graft can be packed through the cannulation in the endplate and graft windows.

Warning: DO NOT pack graft into the locking ring. DO NOT use excessive force while packing graft. DO NOT pack graft while implant is loaded onto the spreader.



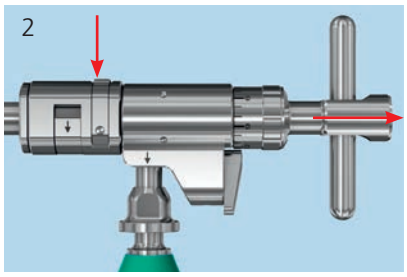
5
Assemble spreader instrument

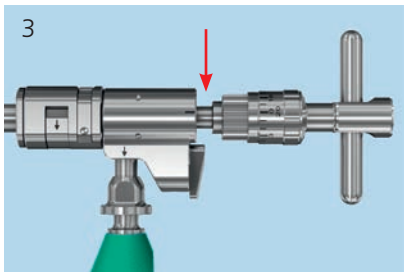
Instruments	
03.807.300	XRL Spreader
03.807.310	XRL Medium Shaft
03.807.311– 03.807.315	XRL Medium Spreader Tops, with 3, 5, 8, 10, or 15 mm distraction
03.807.355	XRL Medium Spreader Top, with 5 mm distraction (Integrated)
03.807.348	XRL Release Tool

Assemble the appropriate size spreader top to the XRL spreader according to the implant central body size selected (See page 28 cross reference list). The spreader tops are designed to prevent over-distracting the implant.

While holding the spreader with the shaft in the horizontal position, set ratchet lever to the "OFF" position (1).

Press T-driver release button and pull back on the T-driver (2). Release the button to set T-driver in the open position (3). T-driver should not be fully removed during this operation.





Insert the selected spreader top into the spreader shaft ❹ and insert the T-driver ❺ by gently pushing and turning the T-driver into the spreader assembly.

Check functionality of the spreader top by rotating the T-driver. If properly assembled, the spreader top should translate during T-driver rotation, and the T-driver will remain retained by the spreader assembly.

6
Secure implant to spreader

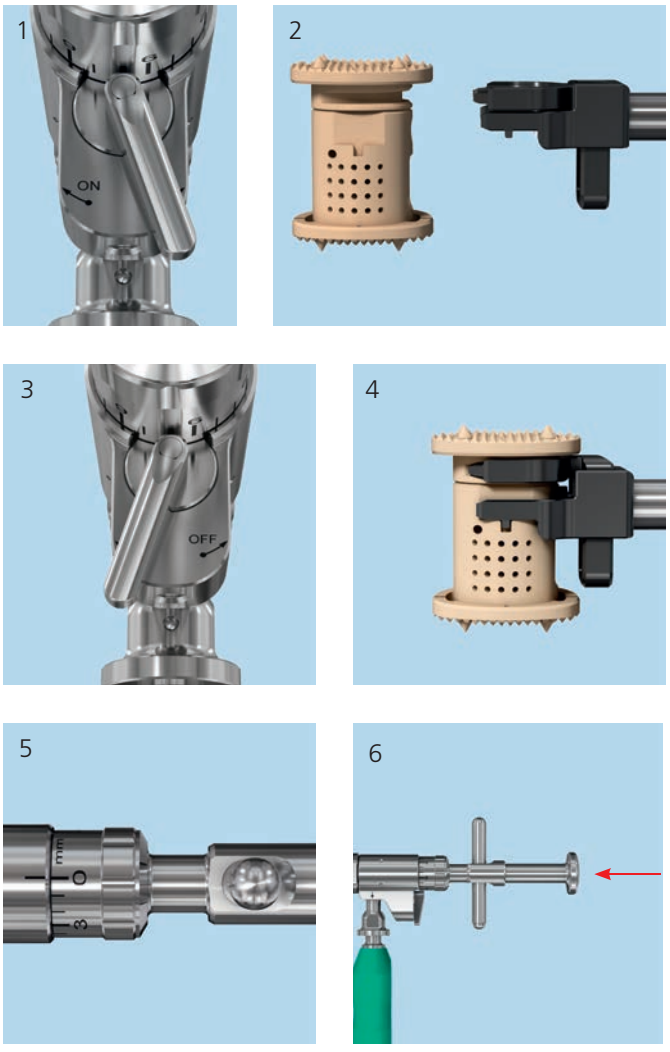
Instruments	
03.807.300	XRL Spreader
03.807.310	XRL Medium Shaft
03.807.311– 03.807.315	XRL Medium Spreader Tops, with 3, 5, 8, 10, or 15 mm distraction
03.807.348	XRL Release Tool
03.807.355	XRL Medium Spreader Top, Integrated

To load the implant, fully collapse the spreader top and set the ratchet lever to the "OFF" position (1).

With the opening of the locking ring facing the instrument, slide the spreader top into the slots below the cranial end-plate (2). Do not force the spreader top onto the implant. Set the ratchet lever "ON" (3) and slightly turn the T-driver clockwise until the spreader shaft engages the notch on the implant for a secure hold (4). Verify the implant is secured over the sterile field.

Set the scale to zero (5).

Completely insert the release tool through the XRL spreader and into the locking ring (6).



7
Insert implant

Instrument	
03.807.300	XRL Spreader

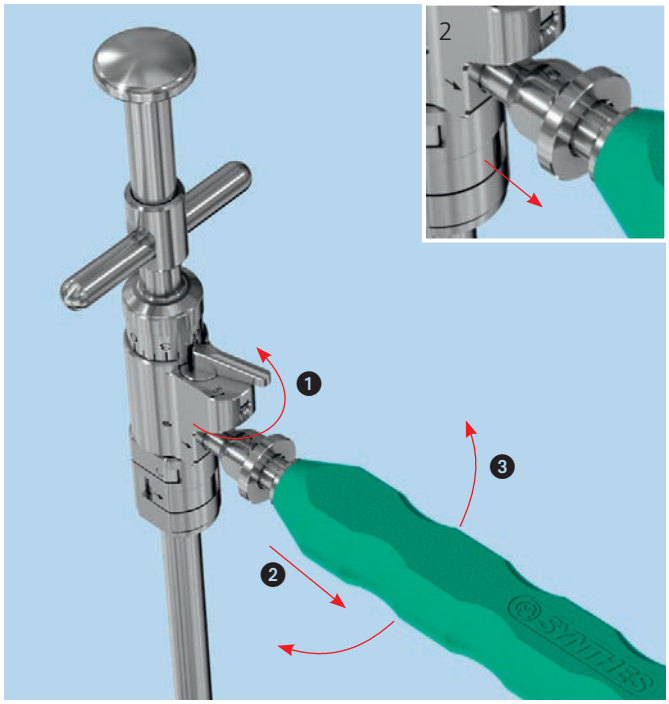
Prior to inserting the implant the spreader handle can be rotated at 90° increments to aid in visualization. Set ratchet lever to "OFF" position ❶. With one hand gripping the spreader shaft, pull back on retaining collar and rotate the spreader handle to the desired position (❷,❸). Release retaining collar. Verify that the spreader handle is locked into position. Reset scale to zero.

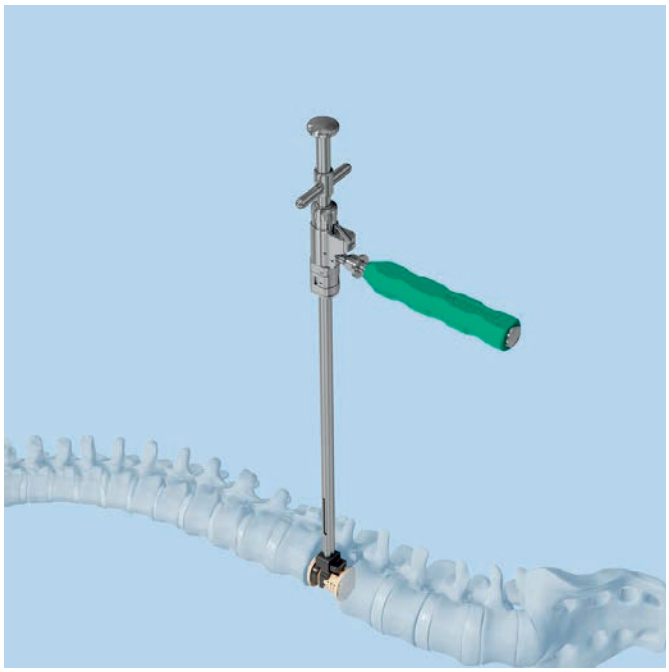
Warning: Do not adjust spreader handle when ratchet lever is set to "ON". This will result in premature distraction of the implant. Do not insert the implant into corpectomy until spreader handle is locked into desired position.

Guide and position the implant with the spreader. Slight distraction of the vertebral bodies may be necessary to ease insertion.

The optimal position for the implant is in the center of the vertebral body endplate. Maintain space around the endplate of the implant to allow peripheral bony fusion.

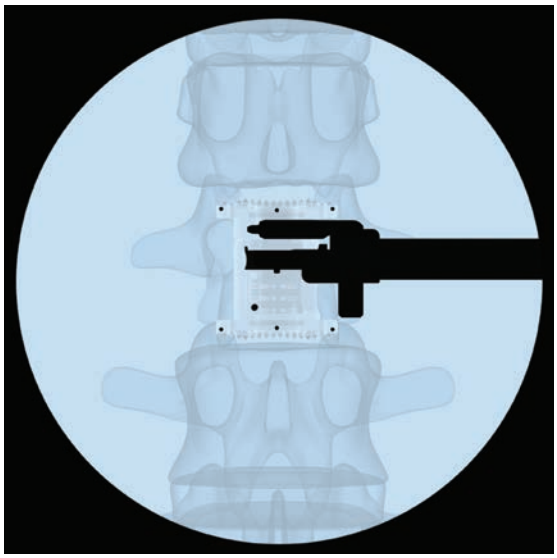
Warning: Do not impact on spreader or implant. Do not manipulate implant unless both the slot and notch are engaged (see step 6, Secure Implant to Spreader).

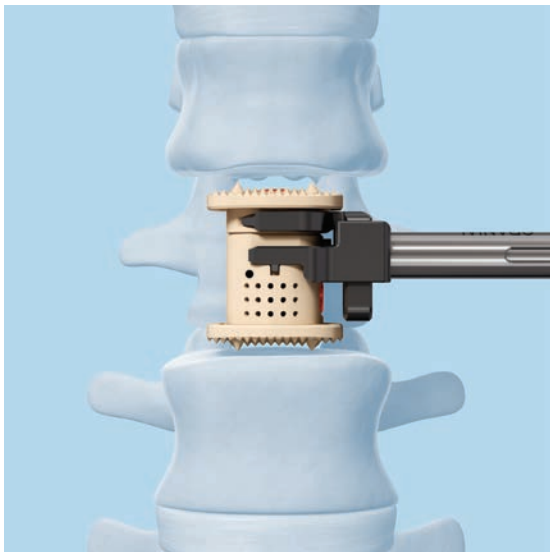


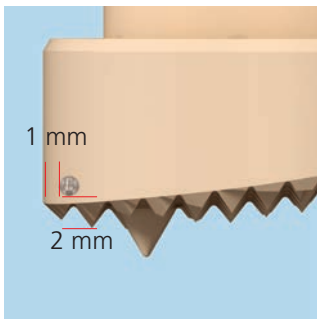


Verify the position of the implant using the image intensifier.

- Tantalum markers and a titanium locking ring is used to determine orientation of the implant
- The 1 mm diameter tantalum markers are embedded into the PEEK endplates to provide radiographic markers for intraoperative or postoperative imaging
- The anterior and medial/lateral markers are located approximately 1 mm from the edges of the implant. The posterior marker is located 1 mm from the edge of the round implant, and 2 mm from the edge of the anatomically shaped endplates. The cranial/caudal locations of the markers are 2 mm from the end of the pyramidal teeth.







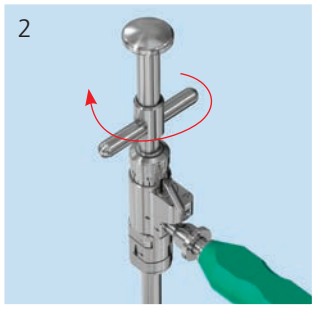
8
Distract and check position

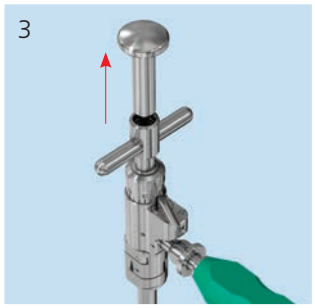
Instrument	
03.807.300	XRL Spreader

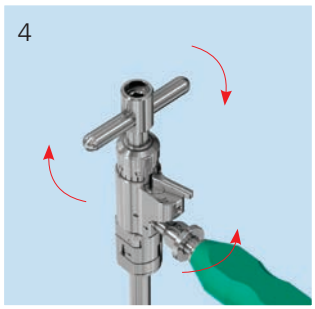
Ensure the release tool is engaged and the ratchet lever is set to the "ON" position (1), then turn the spreader T-driver clockwise (2) and expand the implant until the desired amount of distraction is achieved.

Once the implant has been distracted, fully remove the release tool, (3) and with constant clockwise torque on the T-driver, place the ratchet lever in the "OFF" position (4).

Note: The release tool may also be set in the resting position instead of being fully removed from the spreader. Pull up on the release tool until it travels ~15 mm and it will be retained by the spreader in the resting position.





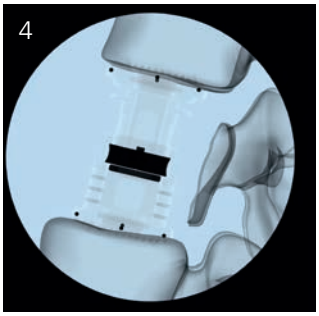


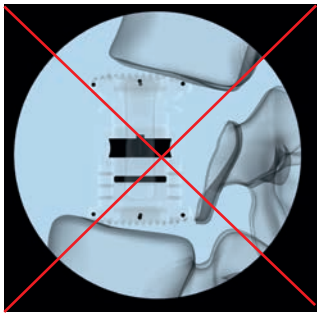
Before removing the spreader, verify the locking ring is properly closed by collapsing the spreader top and visually inspecting the slot through the spreader top (1). When the slot is approximately 1 mm (2), the implant is locked and secured. If the slot is larger (3), re-expand the spreader top and distract the implant slightly to close the locking ring. If implant remains unlocked, follow step 9, Reposition implant (optional). If the locking ring is not visible, inspect lock after spreader is removed (see step 10). Remove the spreader from the implant by setting the ratchet lever to "OFF" and turning the T-driver counterclockwise. When spreader top is fully collapsed, the spreader can now be removed.

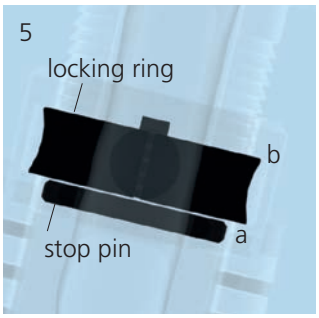
Visually inspect implant/vertebral body interface for gaps to prevent point loading. If a gap is found, repositioning (see step 9, Reposition implant (optional)) is necessary to ensure full endplate surface contact (4).

Verify the position of the implant using the image intensifier. The stop pin can be used to approximate the amount of distraction available. When stop pin (a) is within 1 mm of the locking ring (b), the implant is fully expanded (5).

Warning:
- Do not reuse XRL implants.
- Do not reposition spreader handle during or after distraction. Do not impact on the XRL spreader or implant when repositioning the implant. Be sure to apply constant clockwise torque when switching the ratchet lever to "OFF". Else, the T-driver may release abruptly.
- Distraction of the implant is only permitted with the XRL instrument set.







9
Reposition implant (optional)

Instrument

03.807.300	XRL Spreader

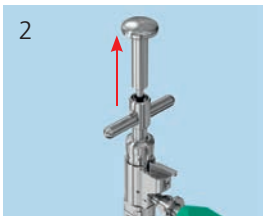
To reposition the implant, fully collapse the spreader top and set the ratchet lever to the "OFF" position (1).

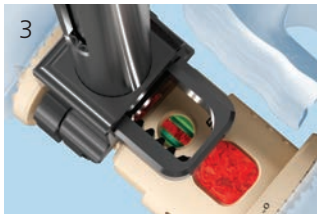
Be sure the release tool is removed or disengaged and set to the resting position (2).

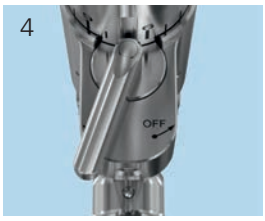
Slide the spreader top into the slots below the cranial endplate (3). Set ratchet lever to "ON" (4) and turn the T-driver clockwise until spreader engages the notch on the implant for a secure hold (5). Fully insert the release tool (6).

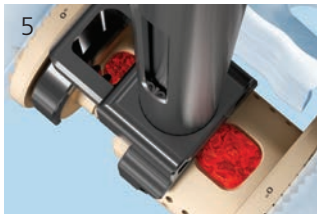
With constant clockwise torque on the T-driver, set the ratchet lever to "OFF" position and compress the implant by turning the T-driver counterclockwise. Reposition the implant to the desired location and follow step 8 to re-distract implant.

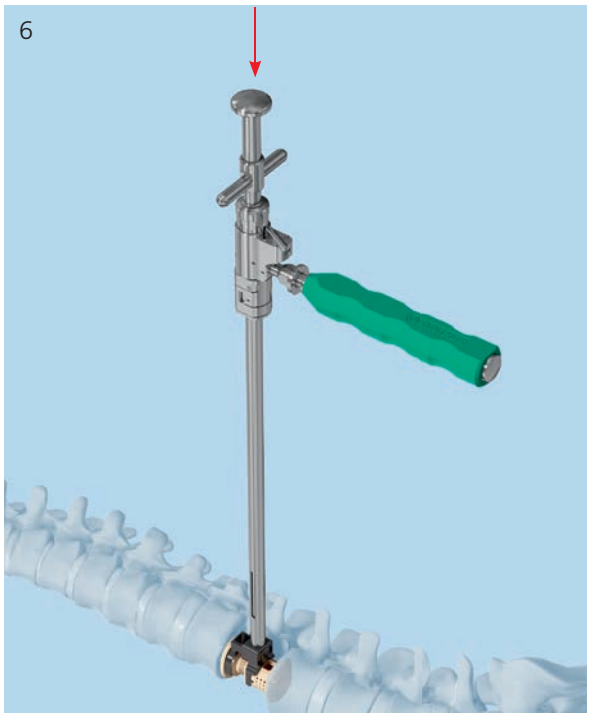
Warning:
- Do not impact on the XRL spreader or implant when repositioning the implant. Be sure to apply constant clockwise torque when switching the ratchet lever to "OFF". Else, the T-driver may release abruptly.
- Repositioning of the implant is only permitted with the XRL Instrument Set.









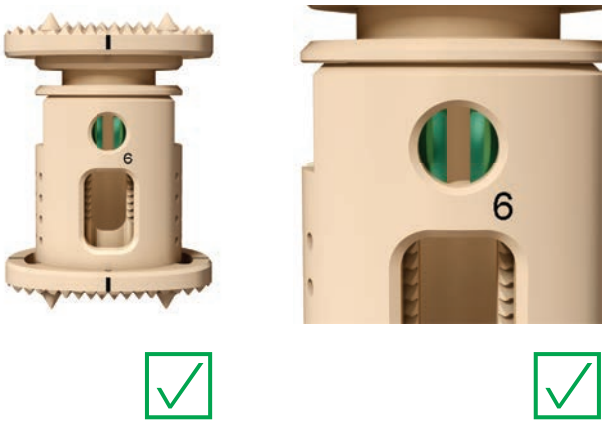


10
Verify lock

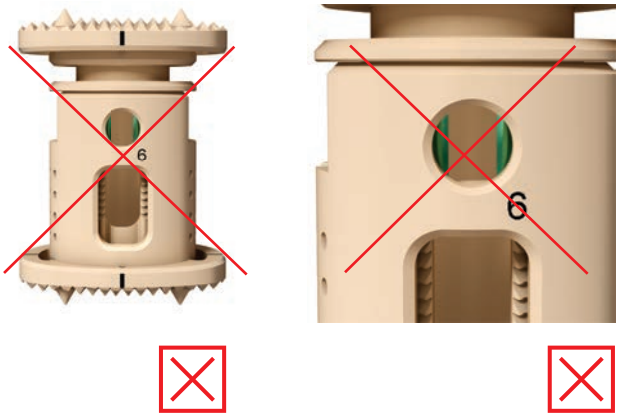
When the implant is in its final position, verify the locking ring on the central body is closed. When the slot is approximately 1 mm (1), the implant is locked and secured. If the slot is larger (2), re-engage the implant with the spreader, with the ratchet lever in the "OFF" position, and with the release tool fully removed, distract the implant slightly to close the locking ring. If implant remains unlocked, repeat step 9 and verify locking ring is closed.

Warning: Locking ring must be properly closed to ensure final implant height is maintained.

1

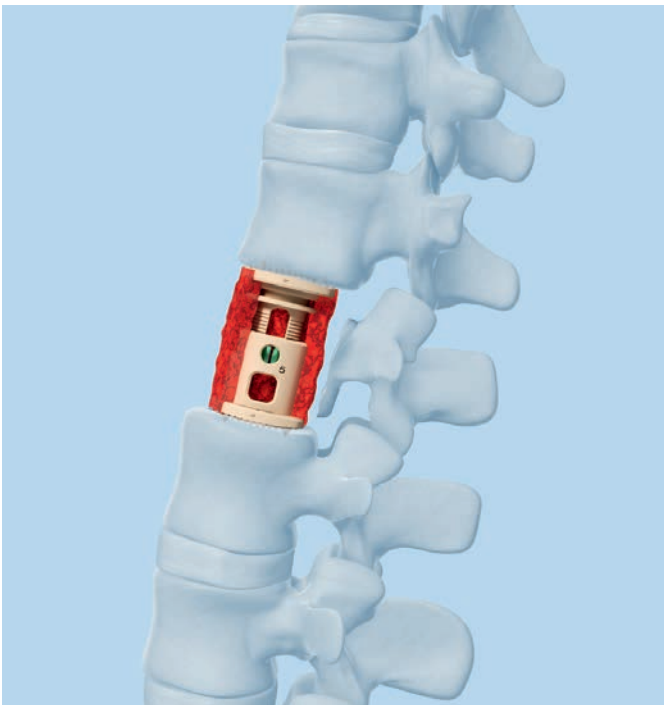


2



1
Apply bone material

Instruments	
03.807.371	XRL Medium Cancellous Bone Graft Packing Tamp
03.807.374	XRL Medium Cancellous Bone Graft Packing Preparation Tamp



In situ graft packing must not occur until final implant position is achieved, as additional bone graft may obstruct repositioning of the implant.

Before packing additional bone graft in or around the cage, use AP and lateral radiographs to verify the position of the implant in relation to the vertebral bodies using the tantalum markers and locking ring for references.

The graft packing tamp has 2 different ends to fit the corresponding window of the expanded central body. The preparation tamp has an angled end that can be used to gain compression on graft that is not accessible with the graft packing tamp.

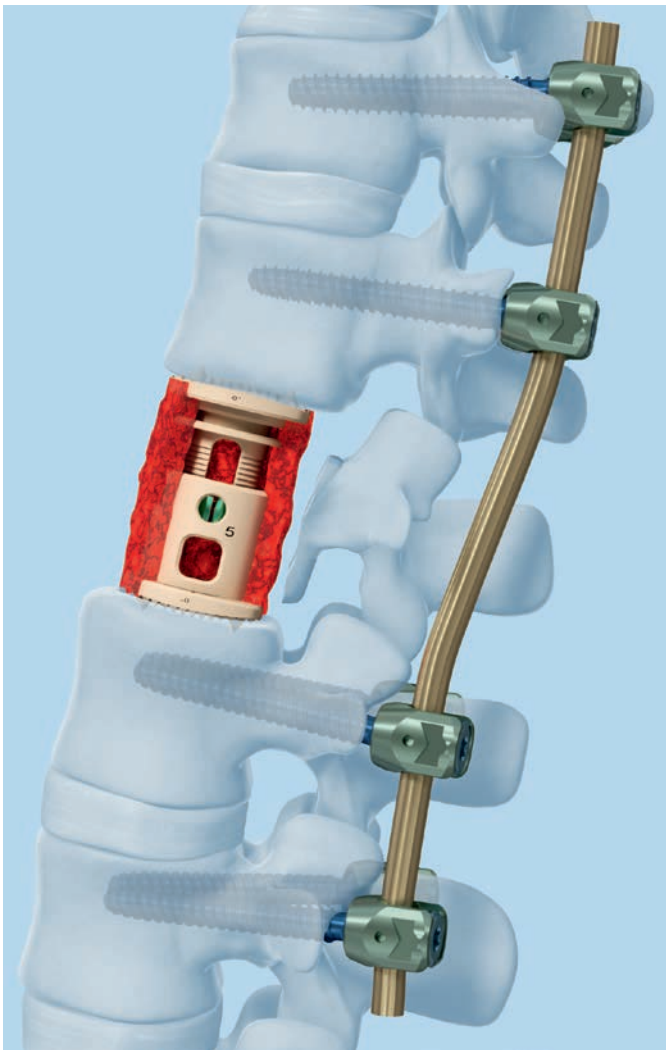
Note: Graft packing tamp will not fit inside the window of integrated implant #1, however can still be used to tamp graft material.

Warning: Do not use excessive force while packing graft.

2
Apply internal fixation system

For spinal stability and to maintain adequate compression on the construct, XRL must be used with an internal fixation system.

Warning: Take care when applying supplemental fixation that the superior and inferior vertebral body endplates remain fixed. Manipulation of vertebral bodies may cause the XRL implant to shift in the wound possibly resulting in a need to reposition the implant.

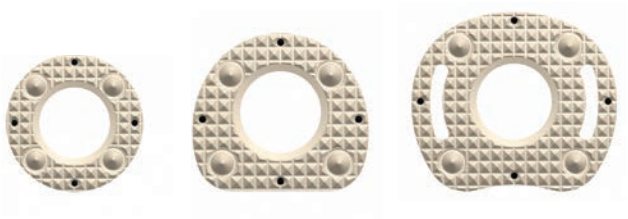


Implants

Modular XRL Implants

XRL Medium

– 21 mm central body diameter
– Endplate footprint options:
  – 21 mm round
  – 21 mm × 24 mm
  – 26 mm × 30 mm
– Construct heights range from 32 mm (fully compressed) to 142 mm (fully expanded)
– Various lordotic/kyphotic angulation options



Integrated XRL Implants

XRL Medium

– 21 mm central body diameter
– 21 mm endplate footprint
– Heights range from 22 mm (fully compressed) to 36 mm (fully expanded)
– 0° parallel endplates

Note: All XRL implants are supplied sterile

Trial Implants

The XRL vertebral body replacement contains a complete line of central body and endplate trials that correspond to each central body and endplate implant. Trials are placed into the corpectomy site intraoperatively to determine the appropriate implant footprint, lordotic/kyphotic angle and central body height.

Use the central body and endplate trials to determine the largest implant size (integrated or modular) that will fit the corpectomy site. Trials may be secured and lowered into corpectomy defect using the implant holder.
Allow 1 mm clearance on each end for the tall spikes on the endplates (modular only).

Medium Trials (green)

Integrated

Modular

Part Number Trial Implants	Description Central Bodies (mm)	Size	Part Number Corresponding Implants
03.807.501	Integrated 22–25 height, 0°	1	08.807.201S
03.807.502	Integrated 24–29 height, 0°	2	08.807.202S
03.807.503	Integrated 28–36 height, 0°	3	08.807.203S
03.807.504	22–27 height	4	08.807.204S
03.807.505	25–33 height	5	08.807.205S
03.807.506	29–39 height	6	08.807.206S
03.807.507	33–43 height	7	08.807.207S
03.807.508	37–52 height	8	08.807.208S
03.807.509	44–59 height	9	08.807.209S
03.807.510	51–66 height	10	08.807.210S
03.807.511	62–77 height	11	08.807.211S
03.807.512	73–88 height	12	08.807.212S
03.807.513	84–99 height	13	08.807.213S
03.807.514	95–110 height	14	08.807.214S
03.807.515	106–121 height	15	08.807.215S

Medium Trial Endplates (green)

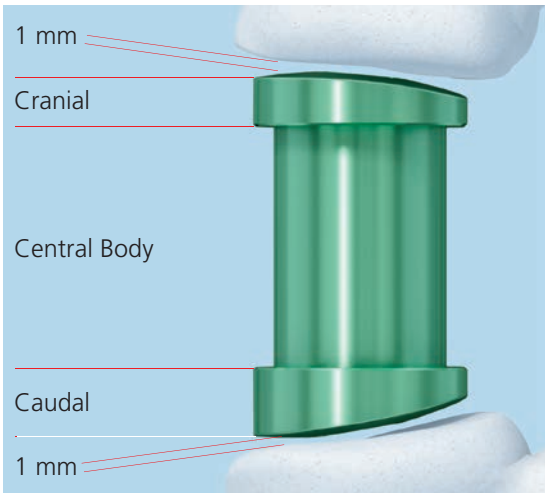
Modular

Part Number	Description (mm)	Corresponding Implants
03.807.521	21 Round, 0°	08.807.221S
03.807.522	21 Round, 5°	08.807.222S
03.807.523	21 Round, 10°	08.807.223S
03.807.524	21 Round, 15°	08.807.224S
03.807.531	21×24, –10°	08.807.231S
03.807.532	21×24, –5°	08.807.232S
03.807.533	21×24, 0°	08.807.233S
03.807.534	21×24, 5°	08.807.234S
03.807.535	21×24, 10°	08.807.235S
03.807.536	21×24, 15°	08.807.236S
03.807.541	26×30, –10°	08.807.241S
03.807.542	26×30, –5°	08.807.242S
03.807.543	26×30, 0°	08.807.243S
03.807.544	26×30, 5°	08.807.244S
03.807.545	26×30, 10°	08.807.245S
03.807.546	26×30, 15°	08.807.246S

Cross Reference List

XRL Medium

Cranial	Endplate Angle						
Endplate Footprint	–10°	–5°	0°	5°	10°	15°	
21 mm	8.5	6.5	5	6.5	8.5	10.5	Endplate
21 mm × 24 mm	8.5	6.5	5	6.5	8.5	10.5	Height
26 mm × 30 mm	8.5	6.5	5	6.5	8.5	10.5	(mm)



Central Body Number	Central Body Height (mm)	Distraction Range (mm)	Spreader Top
1*	22*	3	1
2*	24*	5	2
3*	28*	8	3
4	22	5	6
5	25	8	3
6	29	10	4
7	33	10	4
8	37	15	5
9	44	15	5
10	51	15	5
11	62	15	5
12	73	15	5
13	84	15	5
14	95	15	5
15	106	15	5

* Integrated Assembly, no endplates needed

Caudal	Endplate Angle						
Endplate Footprint	–10°	–5°	0°	5°	10°	15°	
21 mm	8.5	6.5	5	6.5	8.5	10.5	Endplate
21 mm × 24 mm	8.5	6.5	5	6.5	8.5	10.5	Height
26 mm × 30 mm	8.5	6.5	5	6.5	8.5	10.5	(mm)

Instruments

03.807.300 XRL Spreader
For implanting, distracting, and compressing (repositioning the implant)

Ratchet Lever
A ratchet lever on the instrument handle allows for the manipulations of the XRL implant.

Note: Release tool must be engaged with locking ring for implant manipulation.

Ratchet Mode "ON" allows expansion of the implant

Continuous Mode "OFF" allows expansion or compression of the implant

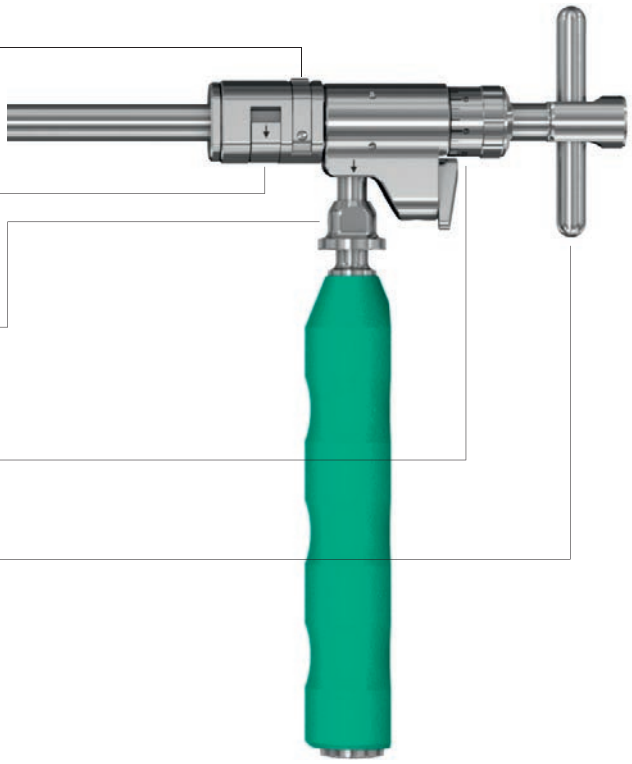
T-driver Release
Allows the T-driver to be disengaged/removed from the spreader

Shaft Release
Allows the spreader shaft to be removed from the spreader

Retaining Collar
Allows 90° rotation of the spreader handle prior to implantation

Scale
Used to determine the achieved amount of expansion

T-driver
Allows expansion or compression of the implant
Clockwise = expansion
Counterclockwise = compression



03.661.010 Metal Tape Gauge

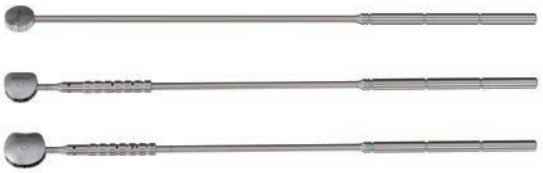
03.807.310 XRL Medium Shaft

03.807.348 XRL Release Tool
Enables implant repositioning

XRL Medium Spreader Tops
Available in six distraction ranges, dependent on the central body implant.

03.807.311 with 3 mm distraction
03.807.312 with 5 mm distraction
03.807.313 with 8 mm distraction
03.807.314 with 10 mm distraction
03.807.315 with 15 mm distraction
03.807.355 with 5 mm distraction (integrated)

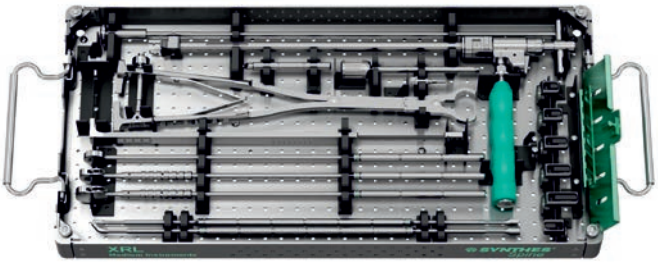
03.807.351 XRL Medium Endplate Screwdriver Tip

03.807.354	XRL Endplate Removal Tool Allows removal of round endplates from the central body	
03.807.357	XRL Medium Torque Limiting Handle	
	XRL Medium Endplate Trials Instrument for Footprint	
03.807.364	21 mm round	
03.807.365	21 mm × 24 mm	
03.807.366	26 mm × 30 mm	
	XRL Medium Cancellous Bone Graft Packing Tamps	
03.807.371	Tamp	
03.807.374	Preparation Tamp	
03.807.382	XRL Medium Implant Holder For holding the implant trials	

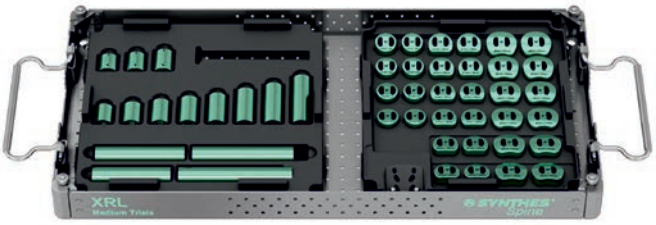
XRL Cases

Graphic Cases

60.807.029 Graphic Case for XRL Medium Instruments



60.807.032 Graphic Case for XRL Medium Trial Implants



Vario Case

68.807.029 Vario Case for XRL

XRL Medium Instrument Set

Instruments

03.661.010	Metal Tape Gauge
03.807.300	XRL Spreader
03.807.310	XRL Medium Shaft
03.807.348	XRL Release Tool
	XRL Medium Spreader Top
03.807.311	with 3 mm distraction
03.807.312	with 5 mm distraction
03.807.313	with 8 mm distraction
03.807.314	with 10 mm distraction
03.807.315	with 15 mm distraction
03.807.351	XRL Medium Endplate Screwdriver Tip
03.807.354	XRL Endplate Removal Tool
03.807.355	XRL Medium Spreader Top with 5 mm distraction (Integrated)
03.807.357	XRL Medium Torque Limiting Handle
	XRL Medium Endplate Trials Instrument for Footprint
03.807.364	21 mm round
03.807.365	21 mm × 24 mm
03.807.366	26 mm × 30 mm
03.807.371	XRL Medium Cancellous Bone Graft Packing Tamp
03.807.374	XRL Medium Cancellous Bone Graft Packing Preparation Tamp
03.807.382	XRL Medium Implant Holder

XRL Medium Trial Instrument Set

Trials

XRL Medium Trial, Integrated, 0°

	Height
03.807.501	22 mm – 25 mm
03.807.502	24 mm – 29 mm
03.807.503	28 mm – 36 mm

XRL Medium Trial, Central Body

	Height
03.807.504	22 mm – 27 mm
03.807.505	25 mm – 33 mm
03.807.506	29 mm – 39 mm
03.807.507	33 mm – 43 mm
03.807.508	37 mm – 52 mm
03.807.509	44 mm – 59 mm
03.807.510	51 mm – 66 mm
03.807.511	62 mm – 77 mm

XRL Medium Trial, Endplate, 21 mm round

03.807.521	0°
03.807.522	5°
03.807.523	10°
03.807.524	15°

XRL Medium Trial Endplate, 21 mm × 24 mm

03.807.531	–10°
03.807.532	–5°
03.807.533	0°
03.807.534	5°
03.807.535	10°
03.807.536	15°

XRL Medium Trial Endplate, 26 mm × 30 mm

03.807.541	–10°
03.807.542	–5°
03.807.543	0°
03.807.544	5°
03.807.545	10°
03.807.546	15°

Also Available

XRL Medium Trial, Central Body

	Height
03.807.512	73 mm – 88 mm
03.807.513	84 mm – 99 mm
03.807.514	95 mm – 110 mm
03.807.515	106 mm – 121 mm

XRL Medium Implants

XRL Medium, Integrated, 0°, sterile

	Height
08.807.201S	22 mm – 25 mm
08.807.202S	24 mm – 29 mm
08.807.203S	28 mm – 36 mm

XRL Medium Central Body, sterile

	Height
08.807.204S	22 mm – 27 mm
08.807.205S	25 mm – 33 mm
08.807.206S	29 mm – 39 mm
08.807.207S	33 mm – 43 mm
08.807.208S	37 mm – 52 mm
08.807.209S	44 mm – 59 mm
08.807.210S	51 mm – 66 mm
08.807.211S	62 mm – 77 mm

XRL Medium Endplate, 21 mm round, sterile

08.807.221S	0°
08.807.222S	5°
08.807.223S	10°
08.807.224S	15°

XRL Medium Endplate, 21 mm × 24 mm, sterile

08.807.231S	–10°
08.807.232S	–5°
08.807.233S	0°
08.807.234S	5°
08.807.235S	10°
08.807.236S	15°

XRL Medium Endplate, 26 mm × 30 mm, sterile

08.807.241S	–10°
08.807.242S	–5°
08.807.243S	0°
08.807.244S	5°
08.807.245S	10°
08.807.246S	15°

08.807.200.02S XRL Medium Endplate Screws, sterile

Also Available

XRL Medium Central Body, sterile

	Height
08.807.212S	73 mm – 88 mm
08.807.213S	84 mm – 99 mm
08.807.214S	95 mm – 110 mm
08.807.215S	106 mm – 121 mm

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