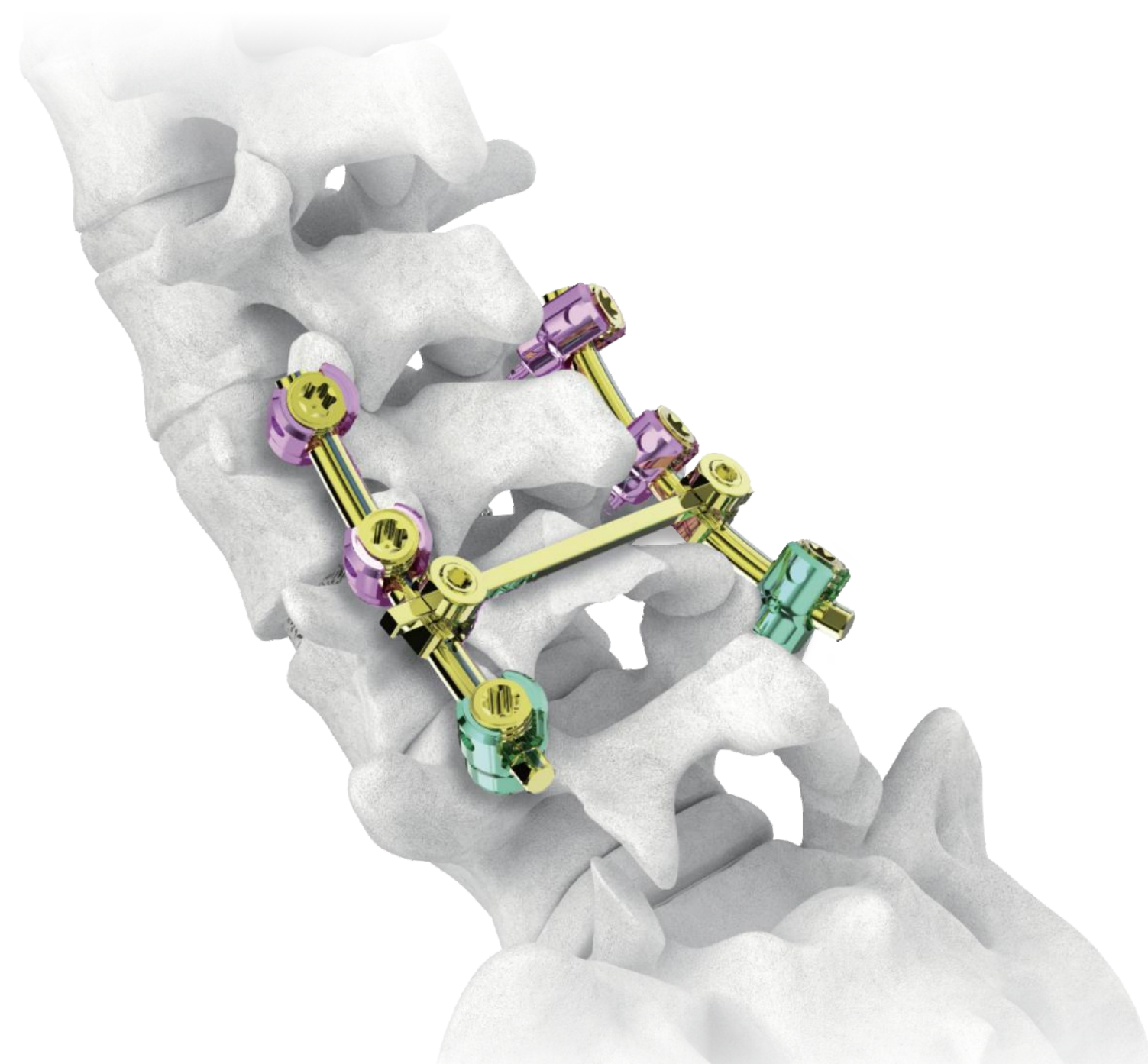


Surgical Technique of MS Posterior Thoracolumbar Pedicle Screw-Rod System

Spine





Founded in 1991, Mindray is a leading global provider of medical devices and solutions.

Firmly committed to our mission to “advance medical technologies to make healthcare more accessible,” we are dedicated to innovation in the fields of Patient Monitoring & Life Support, In-Vitro Diagnostics, Medical Imaging Systems and Orthopaedics, amongst others.

Mindray possesses a sound global R&D, marketing and service network. Inspired by our customers’ needs, we adopt advanced technologies and transform them into accessible innovations that bring healthcare within reach across the world. While improving quality of care, we help reduce its cost, making it more accessible to a larger part of humanity.

Today, Mindray’s products and services are serving healthcare facilities in over 190 countries and regions.

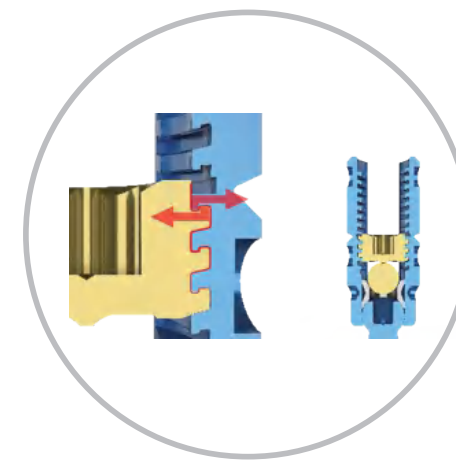
Content

Introduction	Overview of Product Features	01
	Indications	06
	Contraindications	06
Surgical Procedures	Position of the Patient and Approach	07
	Surgical Approach	07
	Procedure	07
	Removal Steps (For Spinal Trauma Requiring Product Removal)	18
	Optional Instrument Operating Steps	20
	Precautions	22
Product Information	Implant	23
	Instrument	24

Latest Generation Posterior Thoracolumbar Pedicle Screw System

- Stable and Reliable System
- Efficient and Smooth Operation
- Few Postoperative Complications
- Highly Comfortable Instrument Operation

Stable and Reliable System



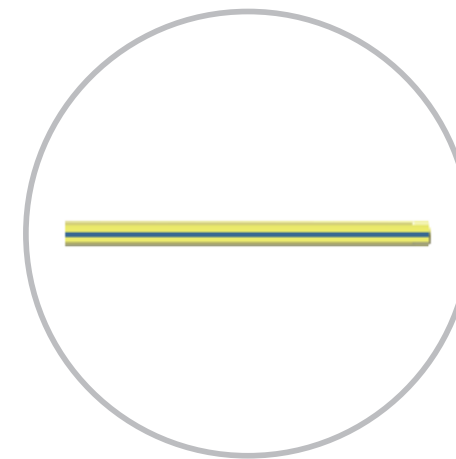
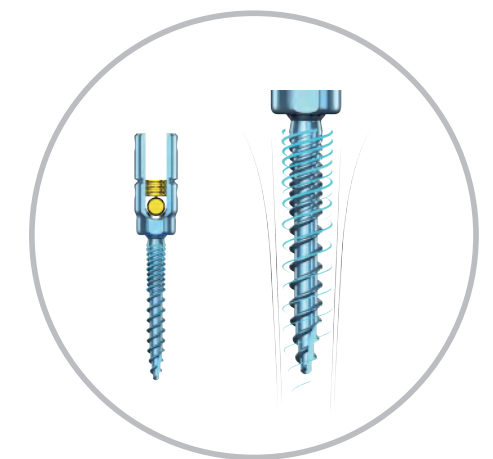
U-shaped screw base with strong ringing force

Patented negative angle hook lock threads to reduce shank opening “O” burst risk.

Screw with high strength

Patented neck reducer thread enhancement technology, low breakage risk.

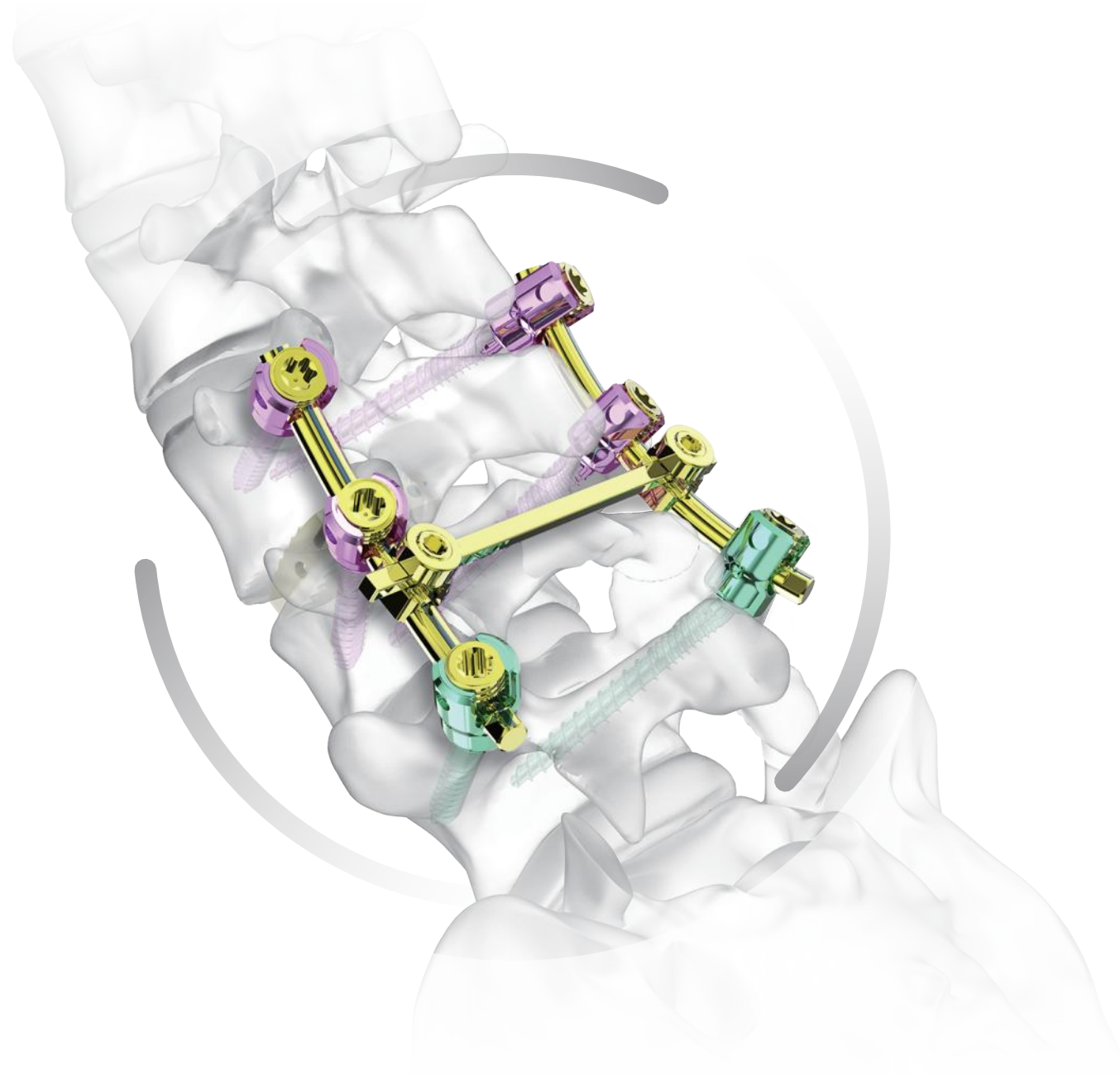
The static bending strength of Mindray screws is **10%** higher than that of most counterparts in the world.



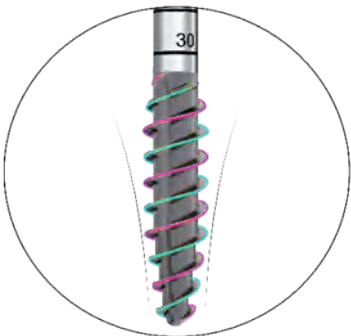
Rod with high fatigue resistance

The electrochemical marking technology, eliminating defects caused by the melting of the metal surface.

20 times more fatigue resistance than conventional rods.

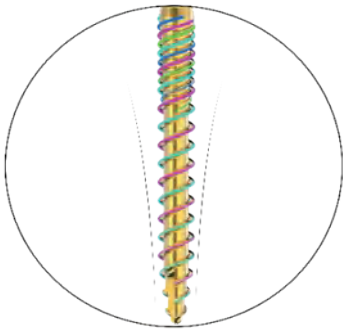


Efficient and Smooth Operation



Tap

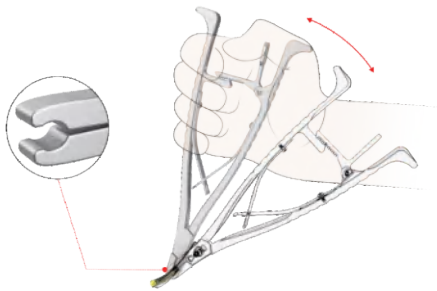
Self-tapping tapered tip design
No slippage in tapping and screw placement, safe and efficient



Pedicle Screw

Screw's double-lead and quadruple-lead threads
Fast insertion and strong holding force

↑ 50%
Screw Insertion speed
↓ 50%
Self-tapping resistance



Rod Holder

All in One:
Firm holding, smooth placement and anti-rotation



Screw Box & Locking Cap Box

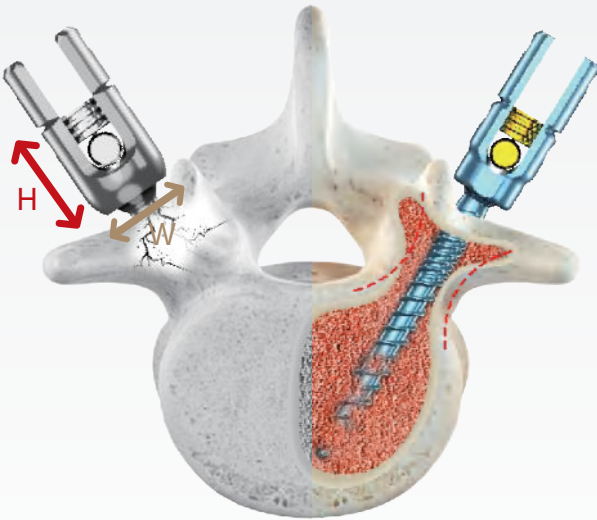
Easy Identification
Reduced area & height of the screw box,
screw placed in areas by dimensions and models
Easy and fast model identification



Screw Shank Guide Rail Design

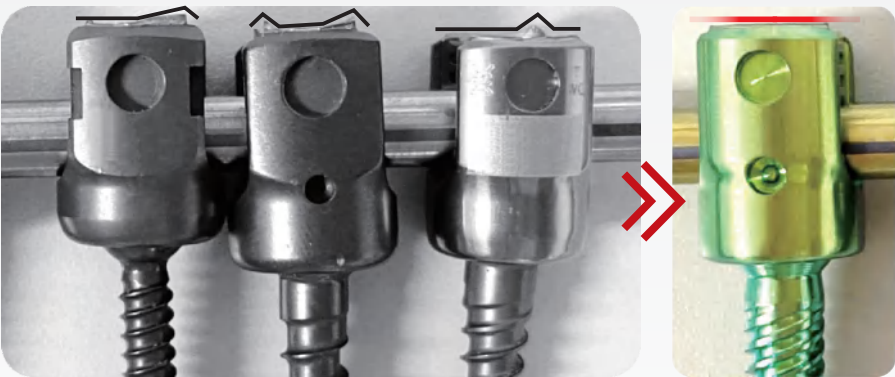
One-step screw plug placement,
"0" risk of thread misalignment!

Few Postoperative Complications



Small pedicle screw base (width and height)

Screws cause fewer injuries to bone and less irritation to soft tissue,
reducing the incidence of postoperative complications



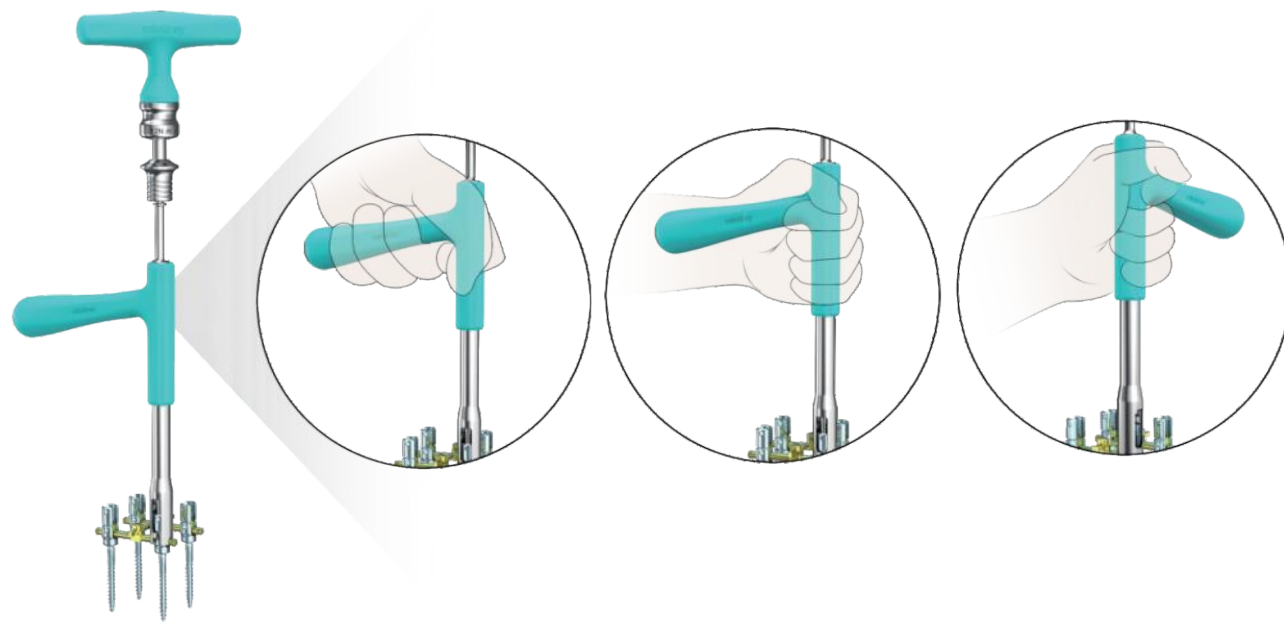
Traditional screw break-off effect

Mindray traceless screw break-off slot design

Increase surgeon safety and patient comfort

The smooth section reduces the patient's operation irritation,
and improves the surgeon's operational safety

Highly Comfortable Instrument Operation



Indications

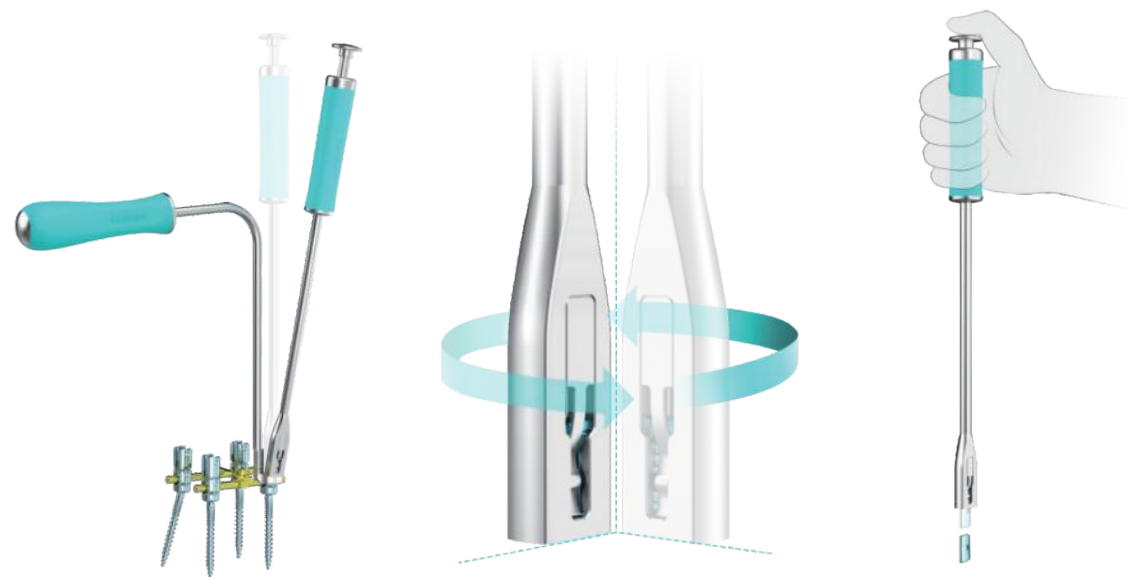
- Spinal segmental instability caused by degenerative diseases
- Spinal stenosis
- Intervertebral disc herniation
- Thoracolumbar fractures and dislocations
- Spinal deformities
- Thoracolumbar spinal tumors or tuberculosis

Contraindications

- Active infection
- Severe osteoporosis
- Diseases causing bone metabolism abnormalities, such as tumors and kidney disease
- Metal Allergy
- Limited mobility or inability to adapt to life changes (e.g., drug abuse, alcoholism, mental illness)

Multi-Scenario Adaptable Counter Sleeve

Ideally used in patients with different bone qualities, improving surgeons' operational comfort



Easy to break off

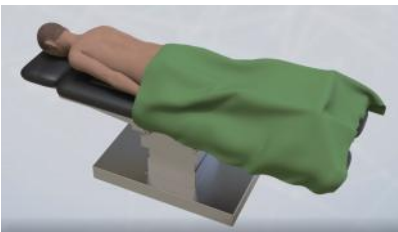
Bi-directional implantation

Easy to remove

Screw Shank Breaker: Bi-directional implantation, comfortable force, stable holding

Patient Positioning

After anesthesia is administered, place the patient in the prone position. Soft positioning pads are used to elevate the iliac crests and chest, leaving the abdomen suspended. The surgeon determines the surgical segment and incision site, and marks the incision on the skin surface. Perform routine disinfection and apply surgical drapes. Cover areas outside the surgical field with isolation film.



Surgical Approach

Exposure of Posterior Approach via Incision

In the prone position, make an incision along the spinous process. Incise the thoracolumbar fascia and multifidus muscle to expose the affected vertebrae and adjacent vertebrae.

Procedure

01 Opening the entry point

Use methods like ridge-crossing or cross-point alignment to locate the puncture point.

Use an opener to penetrate the cortical bone at the pedicle screw entry point.

Instrument:

Thoracolumbar pedicle opener



02 Creating a pathway

For patients with relatively soft bones, a rigid probe can be directly inserted into the pedicle to create the pathway.

The rigid probe features a full black marking at 30-40 mm to indicate depth more intuitively.

Instrument:

Rigid probe



Depending on the surgeon's preference and the patient's bone quality, a reamer can also be used to create the pathway.

Markings at 30-40 mm provide an intuitive depth indication.

Instrument:

- Thoracic reamer (2.7 mm)
- Lumbar reamer, straight (3.2 mm)
- Lumbar reamer, curved (3.2 mm)



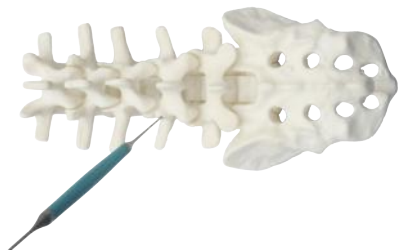
03 Probing

Probing the pedicle walls: Use a bipolar probe to check the integrity of the pedicle walls.

The bipolar probe has both a curved tip and a straight tip to accommodate different surgeons' preferences and scenarios.

Instrument:

- Rigid probe
- Bipolar probe



04 Inserting the guide pin and performing fluoroscopy

Attach the guide pin to the guide pin inserter.

Insert the guide pin into the pedicle, and then detach the guide pin from the inserter and verify positioning via fluoroscopy.

Guide pins are available with spherical and square markers, enabling position distinction on imaging.

Instrument:

- Guide pin inserter
- Cylindrical guide pin
- Spherical guide pin



05 Tapping

Attach the tap to the ratchet handle and perform tapping.

The ratchet handle has three gears, which can be adjusted using the handle's knob.

Note: The surgeon should avoid holding the adjustment knob during tapping to prevent misalignment of the gears.

After tapping, screws typically selected are 0.5-1 mm larger than the tap diameter.

Instrument:

- MS taps (Φ4.5, Φ5.0, Φ5.5, and Φ6.0)
- Ratchet handle



06 Pin placement

Adjust the screwdriver to the appropriate mode: Long-tail mode or short-tail mode, depending on whether long-tail screws (commonly used) or short-tail screws are being used.

Select the appropriate size of the pedicle screw and lock it onto the screwdriver.

Instrument:

- Polyaxial screwdriver
- Monoaxial screwdriver



Adjust the angle and insert the pedicle screw into the pedicle.

Note: Do not grip the red-highlighted area in the image while inserting the screw, as this can loosen the connection between the screwdriver and the pedicle screw.

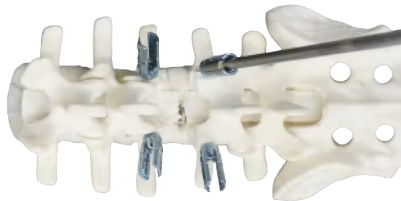


07 Adjusting the screw tail direction

Use the screw head aligner to adjust the direction of the pedicle screw to facilitate the insertion of the connecting rod.

Instrument:

- Screw head aligner

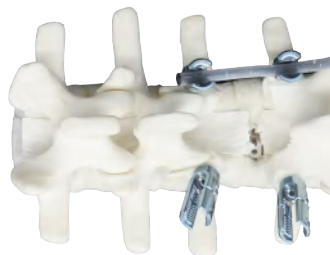


08 Measuring the rod

Use a trial rod to measure the required length of the connecting rod. The length should extend about 5 mm beyond the screw tails at both ends.

Instrument:

- Trial 400
- Trial 150



09 Bending the rod

Attach one end of the selected fixation rod to the fixed arm of the rod bender.

Align the titanium rod marking line according to the physiological curvature of the spinal segment. Generally, for lumbar spine rod bending, the marking line should face the handle side.

Adjust the rod bender's gears to control the bending radius. The smaller the number, the greater the bending angle.

Instrument:

- Rod bender



10 Placing the rod

With the marking line facing upward, use the rod holder to place the connecting rod onto the pedicle screw tails.

Note: Depending on whether spreading or compression is performed, ensure that the appropriate rod length is reserved at both ends.

Instrument:

Rod holder



11 Inserting the screw

Use the single-end screw wrench to securely hold the screw (self-holding function) and screw it into the screw tail.

If the screw is difficult to insert, use a rod press to apply downward pressure on the fixation rod while simultaneously inserting the screw.

Instrument:

Single-end screw wrench



12 Tightening the set screw

Use the long tail nail box-end wrench with a T-shaped quick change handle to tighten the set screw.

Note: There are two types of counterforce protection sleeves, each adapted for GSS connecting rods (Φ6.0) and MS connecting rods (Φ5.5). The difference is in the diameter of the end groove.

Avoid directly using the long tail nail box-end wrench to insert the set screw into the set screw, as this may cause cross-threading if not aligned properly.

Instrument:

MS counterforce protection sleeve
Spinal torque wrench
Long tail nail box-end wrench



13 Spreading and compression

Based on the spinal segment requirements, use parallel compression forceps or parallel spreading forceps to perform the corresponding procedure on the fixed segment.

Note: During spreading or compression, keep one end of the set screw tightly locked, and slightly loosen the other end. Ensure that there is enough length of the fixation rod on the loosened end.

Instrument:

Parallel compression forceps
Parallel spreading forceps

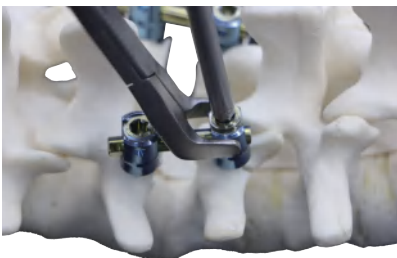


14 Reduction (Lifting)

If there is a slippage or kyphosis, use reduction forceps or oscillating forceps to apply lifting for reduction.

Instrument:

Gun-type reduction forceps
Long oscillating forceps
Short oscillating forceps



15 Exposing the intervertebral space

PLIF is performed through a direct posterior approach, primarily removing the lamina and part of the facet joints.

TLIF is performed through a posterolateral approach, primarily removing one side of the facet joint and part of the lamina.

16 Disc handling

Use a sharp knife to cut the protruding annulus fibrosus, and then use a nucleus forceps to remove the nucleus pulposus. Use a reamer, scraper, or curette to remove the intervertebral disc and endplate cartilage.

The scraper is sharp and easily handles the intervertebral disc and endplate cartilage, but care must be taken to avoid damage to the endplate.

Different angles of curettes are used for handling different areas of the intervertebral disc.

The extended reamer is less likely to obstruct the surgical field or interfere with other instruments.



Instrument:

- Square scraper (curved)
- Waterdrop scraper (straight)
- Curette (left, right, straight)
- Intervertebral disc reamer (6, 8, 10, 12, 14)

17 Measuring the gap

Gradually insert the spreading trial (trial) into the intervertebral space, starting from smaller sizes, to determine the appropriate size of the interbody fusion cage (choose a trial that offers some resistance during insertion but is not difficult).

Use fluoroscopy to confirm that the trial's size and position are appropriate, and that the intervertebral space height is normal.

Note: A 1:1 trial to fusion cage ratio provides a more accurate prediction of the final fusion cage outcome.

The trial can be adapted with a slotted hammer to assist in the insertion and removal of the fusion cage.

Instrument:

Thoracolumbar slotted hammer



18 Bone graft in the fusion cage

Select the appropriately sized fusion cage and connect it to the fusion cage inserter.

Place the fusion cage into the graft cavity and fill it with auto-graft or allograft bone. Apply appropriate compression.

Instrument:

- Thoracolumbar fusion cage inserter
- Thoracolumbar bone graft cavity
- Bone graft compressor



19 Bone graft in the disc

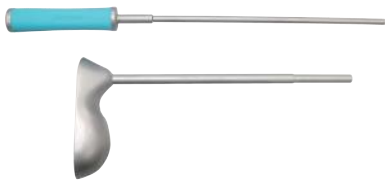
Insert the bone graft funnel into the intervertebral disc 5-15 mm. Then, use the bone graft instrument to inject small amounts of bone particles into the disc repeatedly. The bone particles should be around the size of a mung bean. Avoid injecting more than 1 mL of bone particles at a time to prevent clogging the hole.

Depending on the surgeon's preference, various methods may be used, including bone graft funnels, syringes, or nucleus forceps or tweezers for holding the bone graft.

The bone graft instrument can also be used to apply compression if necessary.

Instrument:

- Thoracolumbar bone graft cavity
- Thoracolumbar bone graft rod



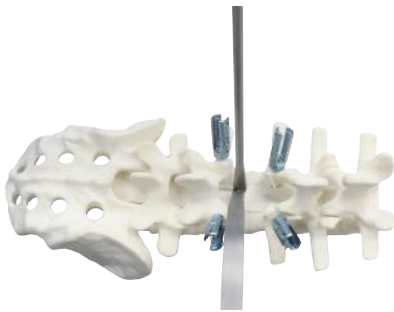
20 Implantation of the fusion cage

Insert the fusion cage, ensuring that it is positioned at least 5 mm from the posterior edge of the vertebral body. Use fluoroscopy to confirm the instrument's position.

If the instrument is not fully inserted, use a fusion cage adjuster with a slotted hammer to deepen the insertion.

Instrument:

- Thoracolumbar fusion cage inserter
- Thoracolumbar fusion cage adjuster



21 Compression and locking

After placing the fusion cage, compression is needed to prevent the instrument from exiting the intervertebral disc space.

During compression, tighten the locking cap to prevent loosening.

Instrument:

- Parallel compression forceps
- T-shaped quick change handle
- Long tail nail box-end wrench



22 Final locking

Use the torque wrench to tighten the locking cap until you hear a "click" sound, indicating that it is fully locked.

Tighten all locking caps in sequence to ensure system stability.

Depending on the surgeon's preference, either a torque wrench or a standard T-shaped handle may be used for tightening.

Instrument:

- Long tail nail box-end wrench
- Spinal torque wrench
- MS counterforce protection sleeve



23 Breaking the screw tail

Place the screw tail breaking assist device onto the pedicle screw and connecting rod, and then use the device to break the screw tail by bending it outward.

Press the button at the back of the breaking device to eject the broken screw tail.

Repeat the process until all screw tails are broken.

Instrument:

- Reduction screw tail breaker
- MS screw tail breaking assist device



24 Placing the connector

Use the connector width measuring instrument to measure the required length of the connecting connector.

Note: The connecting rods come in two sizes, 60 mm and 70 mm. If the measurement is between 30–40 mm, choose the 60 mm size. If the measurement is 50 mm, choose the 70 mm size. If the measurement is greater than 50 mm, a connector is not supported.

Use the connector holding forceps to clamp the connector, align the connecting block with the connecting rod, and press the connecting block until it clicks into place.

Use the SW3.5 connector screwdriver to tighten the internal hexagonal nut of the connecting block.

Instrument:

- Connector width measuring instrument
- SW3.5 connector screwdriver
- Ratchet handle
- Connector holding forceps



25 Suturing and drainage

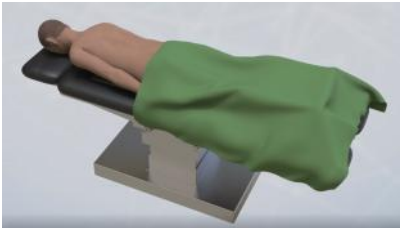
Insert the drainage tube.
Perform suturing, and the surgery is complete.



Removal Steps

01 Exposure

The patient is placed in a prone position, with a midline incision typically used to expose the implanted device.



02 Removal of the connector

If a connector is placed, it must first be removed.

Instrument:

- SW3.5 connector screwdriver
- Ratchet handle



03 Removal of the Set Screw

Use the locking screwdriver and counterforce protection sleeve to sequentially loosen and remove the Set Screw.

Instrument:

- Long tail nail box-end wrench
- T-shaped quick change handle
- MS counterforce protection sleeve



04 Removal of the Pedicle Screw

Depending on the type of screw (monoaxial or polyaxial), select the corresponding screwdriver, and rotate counterclockwise to remove the screw.

Instrument:

- Polyaxial screwdriver
- Monoaxial screwdriver



05 Suturing and drainage

Insert the drainage tube.
Perform suturing, and the surgery is complete.



Optional Instrument Operating Steps

01 Taps

For the MS and GSS systems, in addition to the regular sizes, special small-diameter or large-diameter screws can be paired with 4.0 mm or 6.5 mm taps.

Instrument:

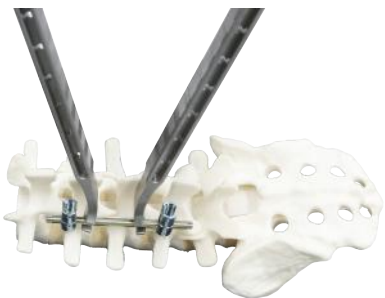
- MS taps (Φ4.0 and Φ6.5)
- GSS taps (Φ4.0 and Φ6.5)

02 Intra-body rod bender

Used for bending the fixation rods again after they are placed in the body, often used in corrective surgeries.

Instrument:

- Intra-body rod bender (left)
- Intra-body rod bender (right)



03 Short opener

To meet different surgeon preferences, a short opener can be used to avoid inserting it too deeply.

Instrument:

- Short thoracolumbar pedicle opener



04 Rod press, oscillating forceps, gun-type reduction forceps

Used to press the fixation rod down into the U-shaped arm of the screw for easier locking cap installation.

The rod press directly applies force to the fixation rod, making the process easier but requiring more strength and less safety.

The oscillating forceps work by fitting the head of the tool into the groove on the outside of the U-shaped arm. By rotating the tool, the lever principle is used to press the fixation rod down, allowing for easier and safer down-pressing of the titanium rod. This method reduces the effort required and enhances safety during the procedure.

The reduction forceps also work by fitting the inner side of the head into the protection sleeve that is nested in the groove on the outside of the U-shaped arm. By squeezing the handle, the fixation rod is pressed down. This method is stable and offers high safety.

 Instrument:

- Long rod bender
- Short oscillating forceps
- Long oscillating forceps
- Gun-type reduction forceps



MS Product Information

Multiple dimensions and models

Rod

P/N	Size
F15AB-PA01115	Φ6.0*40mm
F15AB-PA01116	Φ6.0*45mm
F15AB-PA00071	Φ6.0*50mm
F15AB-PA01117	Φ6.0*55mm
F15AB-PA00072	Φ6.0*60mm
F15AB-PA01118	Φ6.0*65mm
F15AB-PA00073	Φ6.0*70mm
F15AB-PA01119	Φ6.0*75mm
F15AB-PA00074	Φ6.0*80mm
F15AB-PA01120	Φ6.0*85mm
F15AB-PA00075	Φ6.0*90mm
F15AB-PA01121	Φ6.0*95mm
F15AB-PA00076	Φ6.0*100mm
F15AB-PA01122	Φ6.0*105mm
F15AB-PA00077	Φ6.0*110mm
F15AB-PA00078	Φ6.0*120mm
F15AB-PA00079	Φ6.0*130mm
F15AB-PA00080	Φ6.0*140mm
F15AB-PA00081	Φ6.0*150mm
F15AB-PA00462	Φ6.0*160mm
F15AB-PA00463	Φ6.0*170mm
F15AB-PA00082	Φ6.0*180mm
F15AB-PA01123	Φ6.0*190mm
F15AB-PA00083	Φ6.0*200mm
F15AB-PA00084	Φ6.0*250mm
F15AB-PA00085	Φ6.0*300mm
F15AB-PA00086	Φ6.0*350mm
F15AB-PA00087	Φ6.0*400mm
F15AB-PA01124	Φ6.0*450mm
F15AB-PA01125	Φ6.0*500mm



Connector (I)

P/N	Size
F15AB-PA00337	Φ4.0*60mm
F15AB-PA00338	Φ4.0*70mm
F15AB-PA01152	Φ4.0*80mm
F15AB-PA01153	Φ4.0*90mm





Monoaxial Pedicle Screw (Dual)

P/N	Size
F15AB-PA00629	Φ4.0*25mm
F15AB-PA00630	Φ4.0*30mm
F15AB-PA00631	Φ4.0*35mm
F15AB-PA00632	Φ4.0*40mm
F15AB-PA00633	Φ4.0*45mm
F15AB-PA00634	Φ4.0*50mm
F15AB-PA00635	Φ4.5*25mm
F15AB-PA00566	Φ4.5*30mm
F15AB-PA00567	Φ4.5*35mm
F15AB-PA00568	Φ4.5*40mm
F15AB-PA00569	Φ4.5*45mm
F15AB-PA00640	Φ4.5*50mm
F15AB-PA00641	Φ4.5*55mm
F15AB-PA00642	Φ5.0*25mm
F15AB-PA00570	Φ5.0*30mm
F15AB-PA00571	Φ5.0*35mm
F15AB-PA00572	Φ5.0*40mm
F15AB-PA00573	Φ5.0*45mm
F15AB-PA00574	Φ5.0*50mm
F15AB-PA00648	Φ5.0*55mm
F15AB-PA00649	Φ5.5*25mm
F15AB-PA00575	Φ5.5*30mm
F15AB-PA00576	Φ5.5*35mm
F15AB-PA00577	Φ5.5*40mm
F15AB-PA00578	Φ5.5*45mm
F15AB-PA00579	Φ5.5*50mm
F15AB-PA00655	Φ5.5*55mm
F15AB-PA00656	Φ5.5*60mm
F15AB-PA00657	Φ5.5*65mm
F15AB-PA00658	Φ6.0*25mm
F15AB-PA00580	Φ6.0*30mm
F15AB-PA00581	Φ6.0*35mm
F15AB-PA00582	Φ6.0*40mm
F15AB-PA00583	Φ6.0*45mm
F15AB-PA00584	Φ6.0*50mm
F15AB-PA00664	Φ6.0*55mm
F15AB-PA00665	Φ6.0*60mm
F15AB-PA00666	Φ6.0*65mm
F15AB-PA00667	Φ6.5*25mm
F15AB-PA00585	Φ6.5*30mm
F15AB-PA00586	Φ6.5*35mm
F15AB-PA00587	Φ6.5*40mm
F15AB-PA00588	Φ6.5*45mm
F15AB-PA00589	Φ6.5*50mm
F15AB-PA00673	Φ6.5*55mm
F15AB-PA00674	Φ6.5*60mm
F15AB-PA00675	Φ6.5*65mm
F15AB-PA00676	Φ7.0*25mm
F15AB-PA00590	Φ7.0*30mm
F15AB-PA00591	Φ7.0*35mm
F15AB-PA00592	Φ7.0*40mm
F15AB-PA00593	Φ7.0*45mm
F15AB-PA00594	Φ7.0*50mm
F15AB-PA00682	Φ7.0*55mm
F15AB-PA00683	Φ7.0*60mm
F15AB-PA00684	Φ7.0*65mm
F15AB-PA00685	Φ7.5*25mm
F15AB-PA00686	Φ7.5*30mm
F15AB-PA00687	Φ7.5*35mm
F15AB-PA00688	Φ7.5*40mm
F15AB-PA00689	Φ7.5*45mm
F15AB-PA00690	Φ7.5*50mm
F15AB-PA00691	Φ7.5*55mm
F15AB-PA00692	Φ7.5*60mm
F15AB-PA00693	Φ7.5*65mm

Monoaxial Reduction Screw(Dual)

P/N	Size
F15AB-PA00694	Φ4.0*25mm
F15AB-PA00695	Φ4.0*30mm
F15AB-PA00696	Φ4.0*35mm
F15AB-PA00697	Φ4.0*40mm
F15AB-PA00698	Φ4.0*45mm
F15AB-PA00699	Φ4.0*50mm
F15AB-PA00700	Φ4.5*25mm
F15AB-PA00595	Φ4.5*30mm
F15AB-PA00596	Φ4.5*35mm
F15AB-PA00597	Φ4.5*40mm
F15AB-PA00598	Φ4.5*45mm
F15AB-PA00705	Φ4.5*50mm
F15AB-PA00706	Φ4.5*55mm
F15AB-PA00707	Φ5.0*25mm
F15AB-PA00599	Φ5.0*30mm
F15AB-PA00600	Φ5.0*35mm
F15AB-PA00601	Φ5.0*40mm
F15AB-PA00602	Φ5.0*45mm
F15AB-PA00603	Φ5.0*50mm
F15AB-PA00713	Φ5.0*55mm
F15AB-PA00714	Φ5.5*25mm
F15AB-PA00604	Φ5.5*30mm
F15AB-PA00605	Φ5.5*35mm
F15AB-PA00606	Φ5.5*40mm
F15AB-PA00607	Φ5.5*45mm
F15AB-PA00608	Φ5.5*50mm
F15AB-PA00720	Φ5.5*55mm
F15AB-PA00721	Φ5.5*60mm
F15AB-PA00722	Φ5.5*65mm
F15AB-PA00723	Φ6.0*25mm
F15AB-PA00609	Φ6.0*30mm
F15AB-PA00610	Φ6.0*35mm
F15AB-PA00611	Φ6.0*40mm
F15AB-PA00612	Φ6.0*45mm
F15AB-PA00613	Φ6.0*50mm
F15AB-PA00729	Φ6.0*55mm
F15AB-PA00730	Φ6.0*60mm
F15AB-PA00731	Φ6.0*65mm
F15AB-PA00732	Φ6.5*25mm
F15AB-PA00614	Φ6.5*30mm
F15AB-PA00615	Φ6.5*35mm
F15AB-PA00616	Φ6.5*40mm
F15AB-PA00617	Φ6.5*45mm
F15AB-PA00618	Φ6.5*50mm
F15AB-PA00738	Φ6.5*55mm
F15AB-PA00739	Φ6.5*60mm
F15AB-PA00740	Φ6.5*65mm
F15AB-PA00741	Φ7.0*25mm
F15AB-PA00619	Φ7.0*30mm
F15AB-PA00620	Φ7.0*35mm
F15AB-PA00621	Φ7.0*40mm
F15AB-PA00622	Φ7.0*45mm
F15AB-PA00623	Φ7.0*50mm
F15AB-PA00747	Φ7.0*55mm
F15AB-PA00748	Φ7.0*60mm
F15AB-PA00749	Φ7.0*65mm
F15AB-PA00750	Φ7.5*25mm
F15AB-PA00751	Φ7.5*30mm
F15AB-PA00752	Φ7.5*35mm
F15AB-PA00753	Φ7.5*40mm
F15AB-PA00754	Φ7.5*45mm
F15AB-PA00755	Φ7.5*50mm
F15AB-PA00756	Φ7.5*55mm
F15AB-PA00757	Φ7.5*60mm
F15AB-PA00758	Φ7.5*65mm





Polyaxial Pedicle Screw(Dual)

P/N	Size
F15AB-PA00759	Φ4.0*25mm
F15AB-PA00760	Φ4.0*30mm
F15AB-PA00761	Φ4.0*35mm
F15AB-PA00762	Φ4.0*40mm
F15AB-PA00763	Φ4.0*45mm
F15AB-PA00764	Φ4.0*50mm
F15AB-PA00765	Φ4.5*25mm
F15AB-PA00508	Φ4.5*30mm
F15AB-PA00509	Φ4.5*35mm
F15AB-PA00510	Φ4.5*40mm
F15AB-PA00511	Φ4.5*45mm
F15AB-PA00770	Φ4.5*50mm
F15AB-PA00771	Φ4.5*55mm
F15AB-PA00772	Φ5.0*25mm
F15AB-PA00512	Φ5.0*30mm
F15AB-PA00513	Φ5.0*35mm
F15AB-PA00514	Φ5.0*40mm
F15AB-PA00515	Φ5.0*45mm
F15AB-PA00516	Φ5.0*50mm
F15AB-PA00778	Φ5.0*55mm
F15AB-PA00779	Φ5.5*25mm
F15AB-PA00517	Φ5.5*30mm
F15AB-PA00518	Φ5.5*35mm
F15AB-PA00519	Φ5.5*40mm
F15AB-PA00520	Φ5.5*45mm
F15AB-PA00521	Φ5.5*50mm
F15AB-PA00785	Φ5.5*55mm
F15AB-PA00786	Φ5.5*60mm
F15AB-PA00787	Φ5.5*65mm
F15AB-PA00788	Φ6.0*25mm
F15AB-PA00522	Φ6.0*30mm
F15AB-PA00523	Φ6.0*35mm
F15AB-PA00524	Φ6.0*40mm
F15AB-PA00525	Φ6.0*45mm
F15AB-PA00526	Φ6.0*50mm
F15AB-PA00794	Φ6.0*55mm
F15AB-PA00795	Φ6.0*60mm
F15AB-PA00796	Φ6.0*65mm
F15AB-PA00797	Φ6.5*25mm
F15AB-PA00527	Φ6.5*30mm
F15AB-PA00528	Φ6.5*35mm
F15AB-PA00529	Φ6.5*40mm
F15AB-PA00530	Φ6.5*45mm
F15AB-PA00531	Φ6.5*50mm
F15AB-PA00803	Φ6.5*55mm
F15AB-PA00804	Φ6.5*60mm
F15AB-PA00805	Φ6.5*65mm
F15AB-PA00806	Φ7.0*25mm
F15AB-PA00532	Φ7.0*30mm
F15AB-PA00533	Φ7.0*35mm
F15AB-PA00534	Φ7.0*40mm
F15AB-PA00535	Φ7.0*45mm
F15AB-PA00536	Φ7.0*50mm
F15AB-PA00812	Φ7.0*55mm
F15AB-PA00813	Φ7.0*60mm
F15AB-PA00814	Φ7.0*65mm
F15AB-PA00815	Φ7.5*25mm
F15AB-PA00816	Φ7.5*30mm
F15AB-PA00817	Φ7.5*35mm
F15AB-PA00818	Φ7.5*40mm
F15AB-PA00819	Φ7.5*45mm
F15AB-PA00820	Φ7.5*50mm
F15AB-PA00821	Φ7.5*55mm
F15AB-PA00822	Φ7.5*60mm
F15AB-PA00823	Φ7.5*65mm

Polyaxial Reduction Screw (Dual)

P/N	Size
F15AB-PA00824	Φ4.0*25mm
F15AB-PA00825	Φ4.0*30mm
F15AB-PA00826	Φ4.0*35mm
F15AB-PA00827	Φ4.0*40mm
F15AB-PA00828	Φ4.0*45mm
F15AB-PA00829	Φ4.0*50mm
F15AB-PA00830	Φ4.5*25mm
F15AB-PA00537	Φ4.5*30mm
F15AB-PA00538	Φ4.5*35mm
F15AB-PA00539	Φ4.5*40mm
F15AB-PA00540	Φ4.5*45mm
F15AB-PA00835	Φ4.5*50mm
F15AB-PA00836	Φ4.5*55mm
F15AB-PA00837	Φ5.0*25mm
F15AB-PA00541	Φ5.0*30mm
F15AB-PA00542	Φ5.0*35mm
F15AB-PA00543	Φ5.0*40mm
F15AB-PA00544	Φ5.0*45mm
F15AB-PA00545	Φ5.0*50mm
F15AB-PA00843	Φ5.0*55mm
F15AB-PA00844	Φ5.5*25mm
F15AB-PA00546	Φ5.5*30mm
F15AB-PA00547	Φ5.5*35mm
F15AB-PA00548	Φ5.5*40mm
F15AB-PA00549	Φ5.5*45mm
F15AB-PA00550	Φ5.5*50mm
F15AB-PA00850	Φ5.5*55mm
F15AB-PA00851	Φ5.5*60mm
F15AB-PA00852	Φ5.5*65mm
F15AB-PA00853	Φ6.0*25mm
F15AB-PA00551	Φ6.0*30mm
F15AB-PA00552	Φ6.0*35mm
F15AB-PA00553	Φ6.0*40mm
F15AB-PA00554	Φ6.0*45mm
F15AB-PA00555	Φ6.0*50mm
F15AB-PA00859	Φ6.0*55mm
F15AB-PA00860	Φ6.0*60mm
F15AB-PA00861	Φ6.0*65mm
F15AB-PA00862	Φ6.5*25mm
F15AB-PA00556	Φ6.5*30mm
F15AB-PA00557	Φ6.5*35mm
F15AB-PA00558	Φ6.5*40mm
F15AB-PA00559	Φ6.5*45mm
F15AB-PA00560	Φ6.5*50mm
F15AB-PA00868	Φ6.5*55mm
F15AB-PA00869	Φ6.5*60mm
F15AB-PA00870	Φ6.5*65mm
F15AB-PA00871	Φ7.0*25mm
F15AB-PA00561	Φ7.0*30mm
F15AB-PA00562	Φ7.0*35mm
F15AB-PA00563	Φ7.0*40mm
F15AB-PA00564	Φ7.0*45mm
F15AB-PA00565	Φ7.0*50mm
F15AB-PA00877	Φ7.0*55mm
F15AB-PA00878	Φ7.0*60mm
F15AB-PA00879	Φ7.0*65mm
F15AB-PA00880	Φ7.5*25mm
F15AB-PA00881	Φ7.5*30mm
F15AB-PA00882	Φ7.5*35mm
F15AB-PA00883	Φ7.5*40mm
F15AB-PA00884	Φ7.5*45mm
F15AB-PA00885	Φ7.5*50mm
F15AB-PA00886	Φ7.5*55mm
F15AB-PA00887	Φ7.5*60mm
F15AB-PA00888	Φ7.5*65mm





GSS 5.5 Set Screw

P/N	Size
F15AB-PA00466	Φ8.9

GSS 5.5 Rod

P/N	Size
F15AB-PA00624	Φ5.5*40mm
F15AB-PA01108	Φ5.5*45mm
F15AB-PA00100	Φ5.5*50mm
F15AB-PA01109	Φ5.5*55mm
F15AB-PA00101	Φ5.5*60mm
F15AB-PA01110	Φ5.5*65mm
F15AB-PA00102	Φ5.5*70mm
F15AB-PA01111	Φ5.5*75mm
F15AB-PA00103	Φ5.5*80mm
F15AB-PA01112	Φ5.5*85mm
F15AB-PA00104	Φ5.5*90mm
F15AB-PA01113	Φ5.5*95mm
F15AB-PA00105	Φ5.5*100mm
F15AB-PA01114	Φ5.5*105mm
F15AB-PA00106	Φ5.5*110mm
F15AB-PA00107	Φ5.5*120mm
F15AB-PA00339	Φ5.5*130mm
F15AB-PA00340	Φ5.5*140mm
F15AB-PA00341	Φ5.5*150mm
F15AB-PA00464	Φ5.5*160mm
F15AB-PA00465	Φ5.5*170mm
F15AB-PA00342	Φ5.5*180mm
F15AB-PA00625	Φ5.5*190mm
F15AB-PA00343	Φ5.5*200mm
F15AB-PA00344	Φ5.5*250mm
F15AB-PA00345	Φ5.5*300mm
F15AB-PA00346	Φ5.5*350mm
F15AB-PA00347	Φ5.5*400mm
F15AB-PA00348	Φ5.5*450mm
F15AB-PA00349	Φ5.5*500mm

Connector (I)

P/N	Size
F15AB-PA00467	Φ4.0*60mm
F15AB-PA00468	Φ4.0*70mm
F15AB-PA01150	Φ4.0*80mm
F15AB-PA01151	Φ4.0*90mm

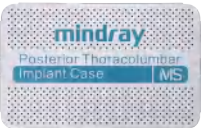
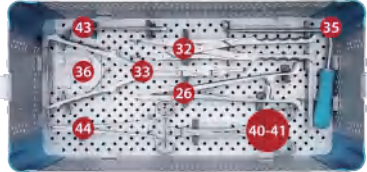
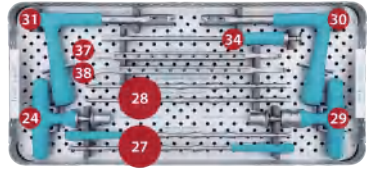
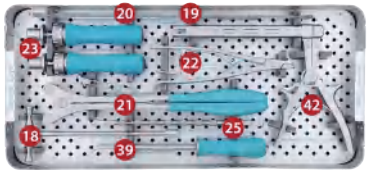
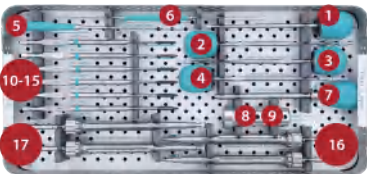


MS Posterior Spinal System Instrument Set
(XS3002-E)

No	REF	Name	Specification	Qty
1	XS0001V	Thoracolumbar Awl	/	1
2	XS0002N	Thoracic Probe 2.7	2.7	1
3	XS0003N	Lumbar Ball Probe,Straight 3.2	3.2	1
4	XS0004N	Lumbar Ball Probe,Curved 3.2	3.2	1
5	XS0040N	Hard Feeler	/	1
6	XS0008N	Dual Ended Feeler	/	1
7	XS0096N	Inserter for Marker	/	1
8	XS0097N	Marker, Cylinder	/	5
9	XS0098N	Marker, Ball	/	5
10	XS0099V	MS Tap Φ4.0	Φ4.0	1
11	XS0100V	MS Tap Φ4.5	Φ4.5	1
12	XS0101V	MS Tap Φ5.0	Φ5.0	1
13	XS0102V	MS Tap Φ5.5	Φ5.5	1
14	XS0103V	MS Tap Φ6.0	Φ6.0	1
15	XS0104V	MS Tap Φ6.5	Φ6.5	1
16	XS0105N	Multi Axial Screwdriver	5.5/6.0	2
17	XS0106N	Fixed Angle Screwdriver	5.5/6.0	2
18	XS0107N	Screw Head Positioner Shaft	/	1
19	XS0015N	Rod Template 400	400	1
20	XS0016N	Rod Template 150	150	1
21	XS0017N	Rod Bender	/	1
22	XS0108N	Forceps Rod Holder	5.5/6.0	1
23	XS0029N	Handle with Quick Coupling	/	2
24	XS0039N	T Handle with Quick Coupling	/	1
25	XS0022N	Rod Pusher, Curved	/	1
26	XS0109N	Rod Gripper	5.5/6.0	2
27	XS0024N	Ended Plug Screwdriver	/	2
28	XS0025V	StarDrive Screwdriver,Shaft	/	2
29	XS0030N	Spinal Torque-Limiting Driver	/	1
30	XS0110N	MS Counter Torque 6.0	6.0	1
31	XS0190N	MS Counter Torque 5.5	5.5	1
32	XS0020N	Parallel Compressor	/	1
33	XS0021N	Parallel Distractor	/	1
34	XS0111N	Tap Breaker	5.5/6.0	1
35	XS0112N	MS Hold Sleeve for Breaking Nail Tail	5.5/6.0	1
36	XS0113N	Measuring Card	/	1
37	XS0031N	In-Situ Rod Bender, Left	5.5/6.0 L	1
38	XS0032N	In-Situ Rod Bender, Right	5.5/6.0 R	1
39	XS0019N	Rod Pusher,Long	5.5/6.0	1
40	XS0116N	Forceps Rocker,Long	5.5/6.0	1
41	XS0117N	Forceps Rocker,Short	5.5/6.0	1
42	XS0118N	Rod Reducer with Pistol Grip	5.5/6.0	1
43	XS0036N	Hexagonal Screwdriver SW3.5	SW3.5	1
44	XS0037N	Crosslink Holder	/	1
45	XS0120N-E	MS Posterior Thoracolumbar Instrument Case	/	1
Total				59

Optional

REF	Name	Specification	Qty
XS0124N	MS Rod Cutter	/	1
XS0122N-E	MS Posterior Thoracolumbar Implant Case	/	1



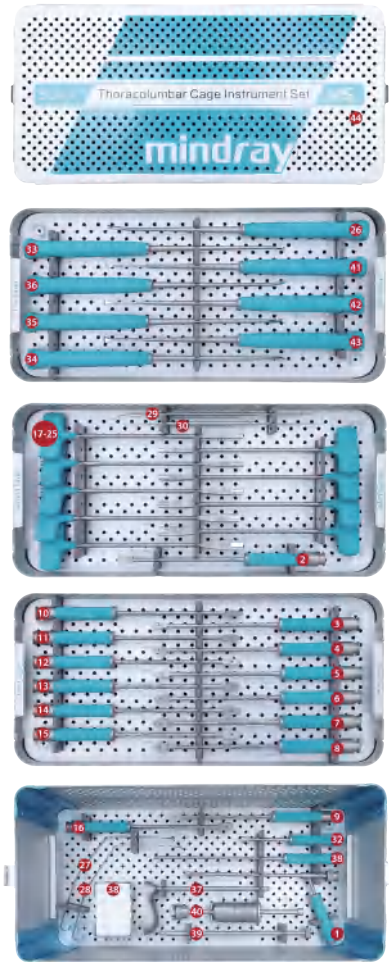
Thoraco-Lumbar Cage III (Sterile)

Materials: PEEK+ Tantalum



REF(Article No)	Speciication
F15CB-PA00060	8*22*10mm
F15CB-PA00061	8*26*10mm
F15CB-PA00062	8*32*10mm
F15CB-PA00086	9*22*10mm
F15CB-PA00087	9*26*10mm
F15CB-PA00088	9*32*10mm
F15CB-PA00063	10*22*10mm
F15CB-PA00064	10*26*10mm
F15CB-PA00065	10*32*10mm
F15CB-PA00089	11*22*10mm
F15CB-PA00090	11*26*10mm
F15CB-PA00091	11*32*10mm
F15CB-PA00066	12*22*10mm
F15CB-PA00067	12*26*10mm
F15CB-PA00068	12*32*10mm
F15CB-PA00092	13*22*10mm
F15CB-PA00093	13*26*10mm
F15CB-PA00094	13*32*10mm
F15CB-PA00069	14*22*10mm
F15CB-PA00070	14*26*10mm
F15CB-PA00071	14*32*10mm

MS Thoracolumbar Cage Instrument Set
(XS5001-E)



No	REF	Name	Speciication	Qty
1	XS0061N	Thoracolumbar Cage Inserter	/	1
2	XS0127N	Thoracolumbar Distractor 7mm*22mm	7mm*22mm	1
3	XS0062N	Thoracolumbar Distractor 8mm*22mm	8mm*22mm	1
4	XS0191N	Thoracolumbar Distractor 9mm*22mm	9mm*22mm	1
5	XS0063N	Thoracolumbar Distractor 10mm*22mm	10mm*22mm	1
6	XS0192N	Thoracolumbar Distractor 11mm*22mm	11mm*22mm	1
7	XS0064N	Thoracolumbar Distractor 12mm*22mm	12mm*22mm	1
8	XS0193N	Thoracolumbar Distractor 13mm*22mm	13mm*22mm	1
9	XS0065N	Thoracolumbar Distractor 14mm*22mm	14mm*22mm	1
10	XS0066N	Thoracolumbar Distractor 8mm*26mm	8mm*26mm	1
11	XS0194N	Thoracolumbar Distractor 9mm*26mm	9mm*26mm	1
12	XS0067N	Thoracolumbar Distractor 10mm*26mm	10mm*26mm	1
13	XS0195N	Thoracolumbar Distractor 11mm*26mm	11mm*26mm	1
14	XS0068N	Thoracolumbar Distractor 12mm*26mm	12mm*26mm	1
15	XS0196N	Thoracolumbar Distractor 13mm*26mm	13mm*26mm	1
16	XS0069N	Thoracolumbar Distractor 14mm*26mm	14mm*26mm	1
17	XS0070V	Intervertebral Disc Rotate Cutter 6mm	6mm	1
18	XS0197V	Intervertebral Disc Rotate Cutter 7mm	7mm	1
19	XS0071V	Intervertebral Disc Rotate Cutter 8mm	8mm	1
20	XS0198V	Intervertebral Disc Rotate Cutter 9mm	9mm	1
21	XS0072V	Intervertebral Disc Rotate Cutter 10mm	10mm	1
22	XS0199V	Intervertebral Disc Rotate Cutter 11mm	11mm	1
23	XS0073V	Intervertebral Disc Rotate Cutter 12mm	12mm	1
24	XS0200V	Intervertebral Disc Rotate Cutter 13mm	13mm	1
25	XS0074V	Intervertebral Disc Rotate Cutter 14mm	14mm	1
26	XS0075N	Square Curette, Curved	C	1
27	XS0076N	Nerve Root Retractor, Large	L	1
28	XS0077N	Nerve Root Retractor, Small	S	1
29	XS0078N	Nerve Dissector with Hook and Groove 5mm	5mm	1
30	XS0079N	Nerve Dissector with Hook 5mm	5mm	1
31	XS0080N	Thoracolumbar Bone Graft Table	/	1
32	XS0081N	Bone Graft Compactor	/	1
33	XS0082N	Teardrop Curette, Straight	S	1
34	XS0083N	Cup Curette, Left Oset	L	1
35	XS0084N	Cup Curette, Right Oset	R	1
36	XS0085N	Cup Curette, Straight	S	1
37	XS0086N	Bone Graft Funnel	/	1
38	XS0087N	Thoracolumbar Bone Graft Impactor	/	1
39	XS0088N	Thoracolumbar Cage Pusher	/	1
40	XS0089N	Thoracolumbar Slap Hammer	/	1
41	XS0201N	Round Bone Curette 7mm		1
42	XS0202N	Round Bone Curette 8mm		1
43	XS0203N	Round Bone Curette 9mm		1
44	XS0090N-E	MS PLIF/TLIF Instrument Case	/	1
Total				44

Optional

REF	Name	Speciication	Qty
XS0204N	Teardrop Curette, Left Oset	L	1
XS0205N	Teardrop Curette, Right Oset	R	1
XS0206N	Square Bone Curette 7.5mm*6.5mm	7.5mm*6.5mm	1
XS0207N	Square Bone Curette 8.5mm*7.5mm	8.5mm*7.5mm	1
XS0208N	Square Bone Curette 9.5mm*8.5mm	9.5mm*8.5mm	1
XS0209N	Square Bone Curette 10.5mm*9.5mm	10.5mm*9.5mm	1