

# NOVA

## Minimal Invasive System

### **N**eat

simplified surgical technique

### **O**ptimal

change in between minimal invasive, open, or percutaneous

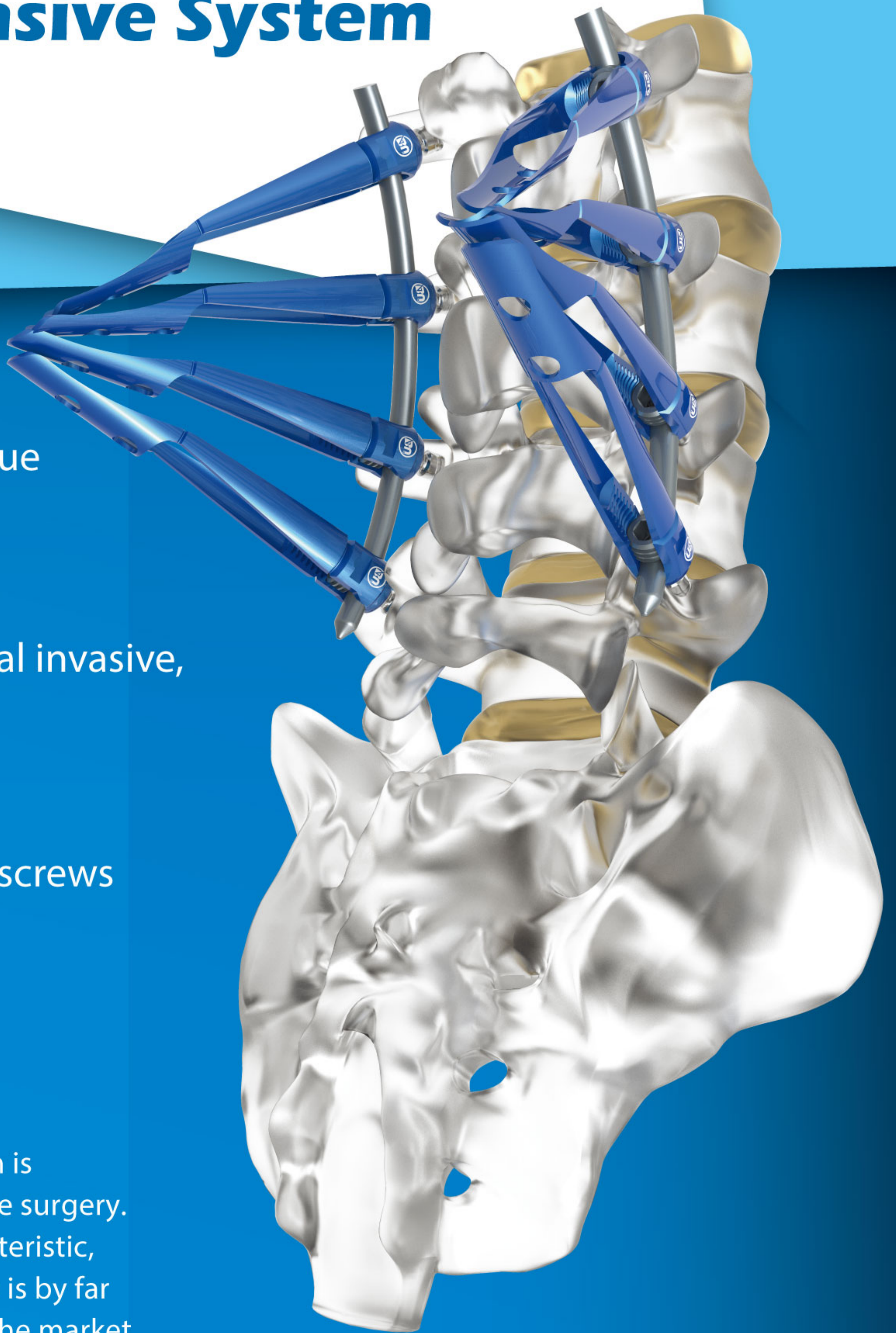
### **V**ariety

choice of different type of screws

### **A**dvance

smallest incision

The NOVA Minimal Invasive System is designed for minimal invasive spine surgery. With the special design and characteristic, the NOVA Minimal Invasive System is by far the most advanced MIS system in the market.



The ReBorn Essence NOVA Minimal Invasive System is designed for the treatment in spinal diseases. The poly axial screws with long breakable blades are simplifying the mini-open spine surgery. The rods, for fusion of the spine, come with different lengths.

The NOVA Minimal Invasive System is made for spine stabilization prior to fusion at the anterior column of the vertebrae. After fused spine occurred, the implants are intended to be removed. Please refer to the use of indication stated in the manual of The ReBorn Essence NOVA Minimal Invasive System. The ReBorn Essence NOVA Minimal Invasive System is not intended to be used with other systems of pedicle screws.



## Indication

The mini-open surgical approach is intended to treat lumbosacral with two small incisions. Autograft or allograft must be used in combination with the system. When the fusion is established, the implant is intended to be removed. From thoracic to sacrum, this system is designed to provide stabilization with immobilization for segments with diseases of deformities, chronic instabilities, degenerative disc diseases, spondylolisthesis, fracture, dislocation, scoliosis, hyperlordosis, hyperkyphosis, and failed previous fusion.

### Accurate Alignment

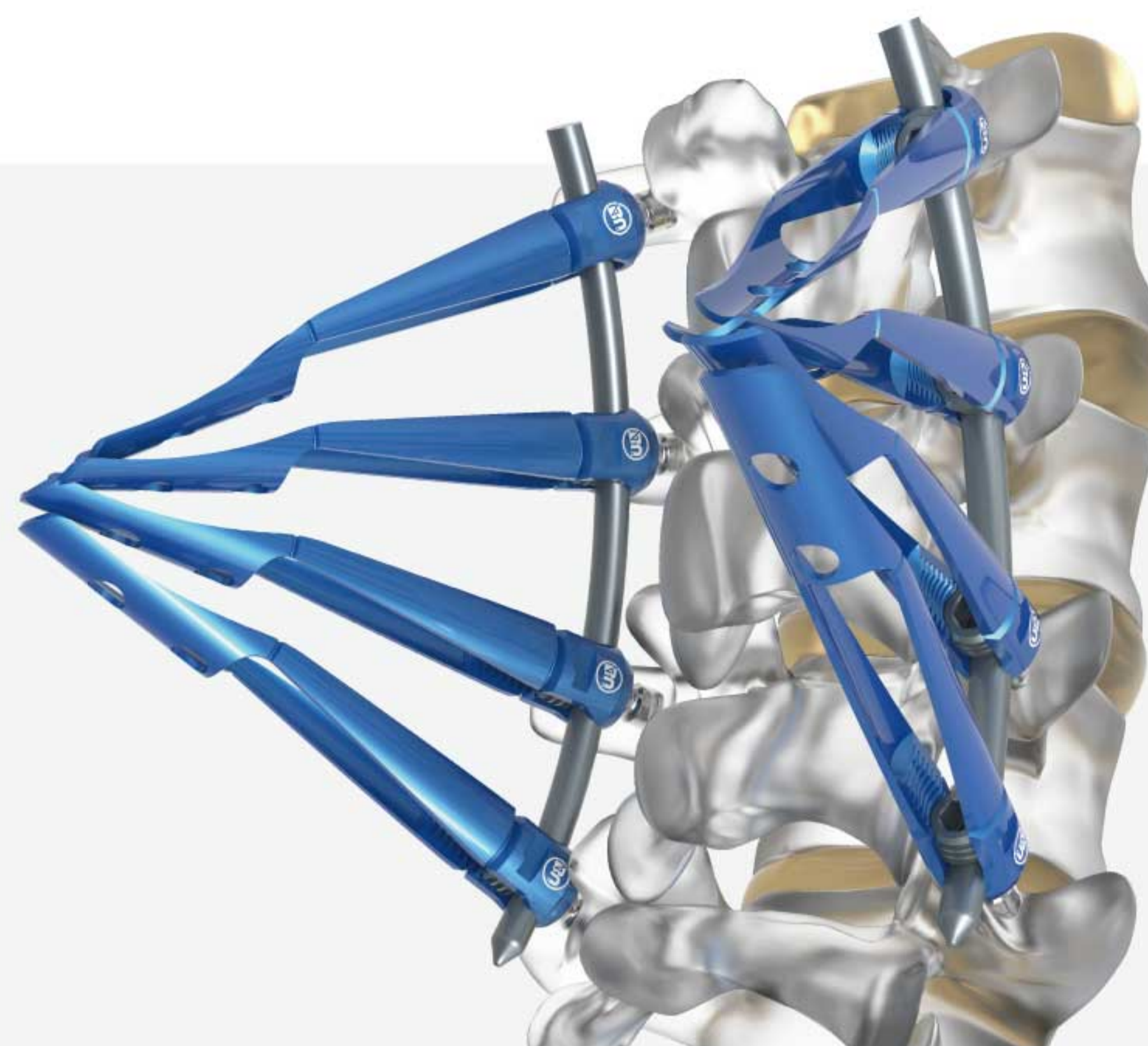
The pilot holes on the top of the blades can assist on screw alignment.

### PM Switch

Change between percutaneous and mini-open operation technique at any time.

### Minimal Incision

A 3.5 cm incision is sufficient for a three-level stabilization.



## Contraindication

In the condition which is absence or compromise of significant stabilizing elements. Patients with severe osteoporosis, infection, metal allergy, severe metabolic bone disease, or any entity or condition that totally precludes the possibility of fusion. In addition, some of the lifestyle of the patient, will be affecting the stress on the implants and causing the failure of the implantation, such as their occupation, overweight, mental illness, alcoholism, or drug abuse.

## Introduction

Minimal Invasive Systems are made for less invasive operation, which mainly focuses on reducing blood loss, tissue and ligament trauma, and hospital stays. The Paraspinal posterior approach, known as The Wiltse Approach (Figure 1), to the lumbar spine is for spinal fusion, especially regarding lumbosacral spondylolisthesis treatment<sup>1</sup>. The very first paraspinal approach was first described by Watkins in 1959<sup>2</sup>. Then Wiltse<sup>3-5</sup> described a modified trans-muscular paraspinal approach consisting of longitudinal separation of the sacrospinalis muscle between its multifidus and longissimus parts. From then on every company with the design of minimal invasive products are based on Wiltse's idea of approaching.

### Reference :

- [1]. Anatomical Study of the paraspinal approach to the lumbar spine  
Eur Spine J. 2005 May; 14(4): 366–371.
- [2]. Watkins J Bone Joint Surg Am. 1959; 41:388.
- [3]. Wiltse Clin Orthop. 1973;91:48.
- [4]. Wiltse Spine. 1988;13:696.
- [5]. Wiltse J Bone Joint Surg Am. 1968; 50:919.

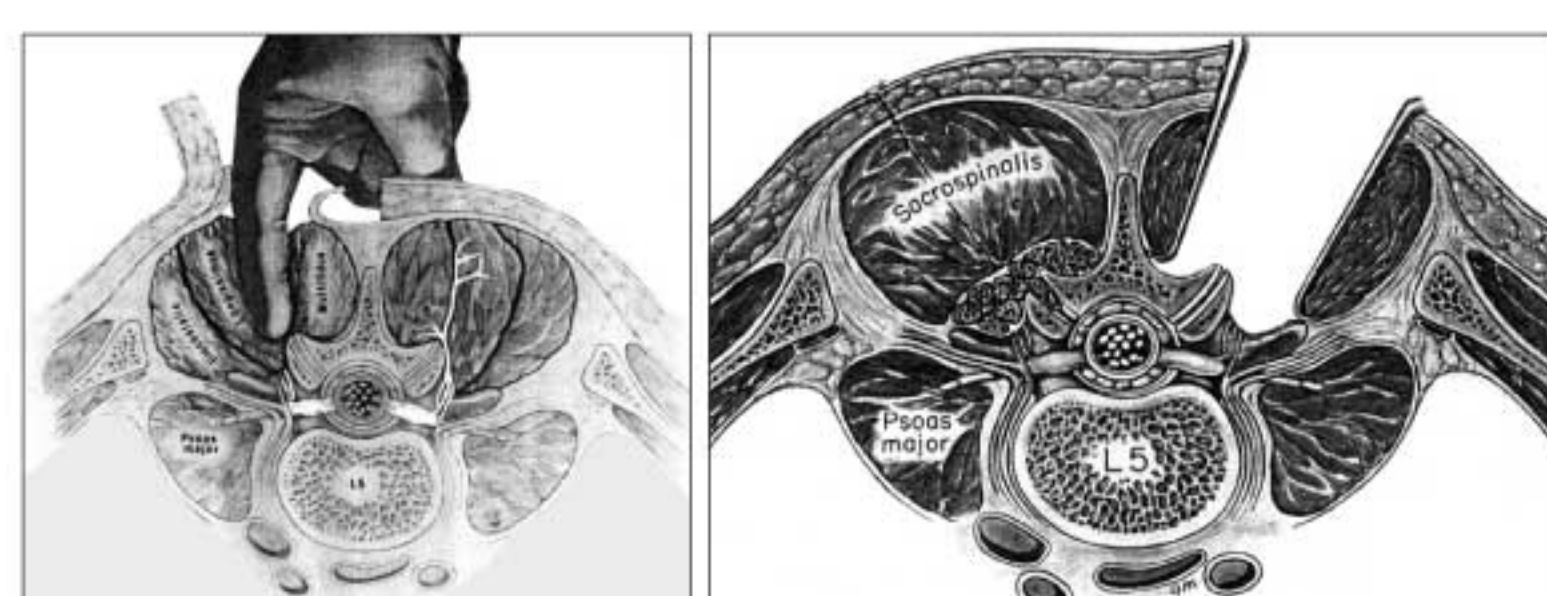
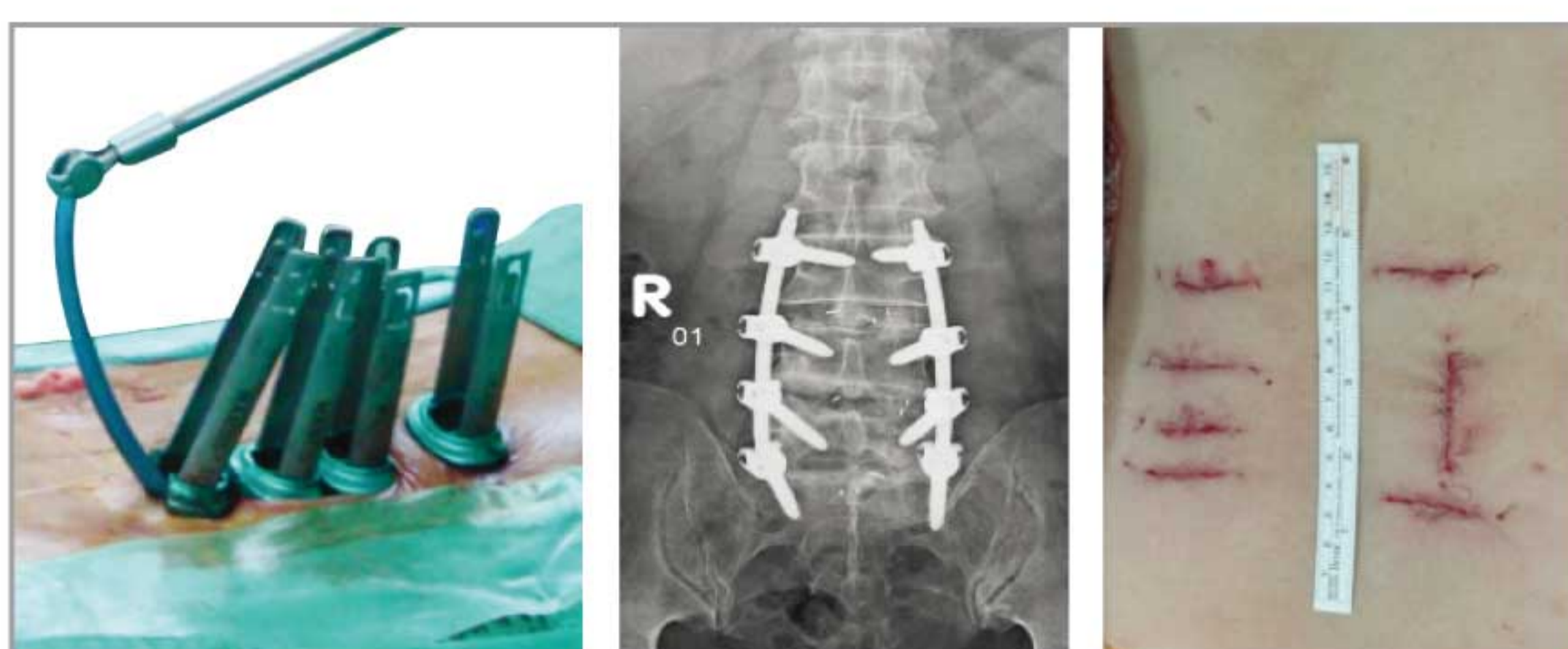


Figure 1

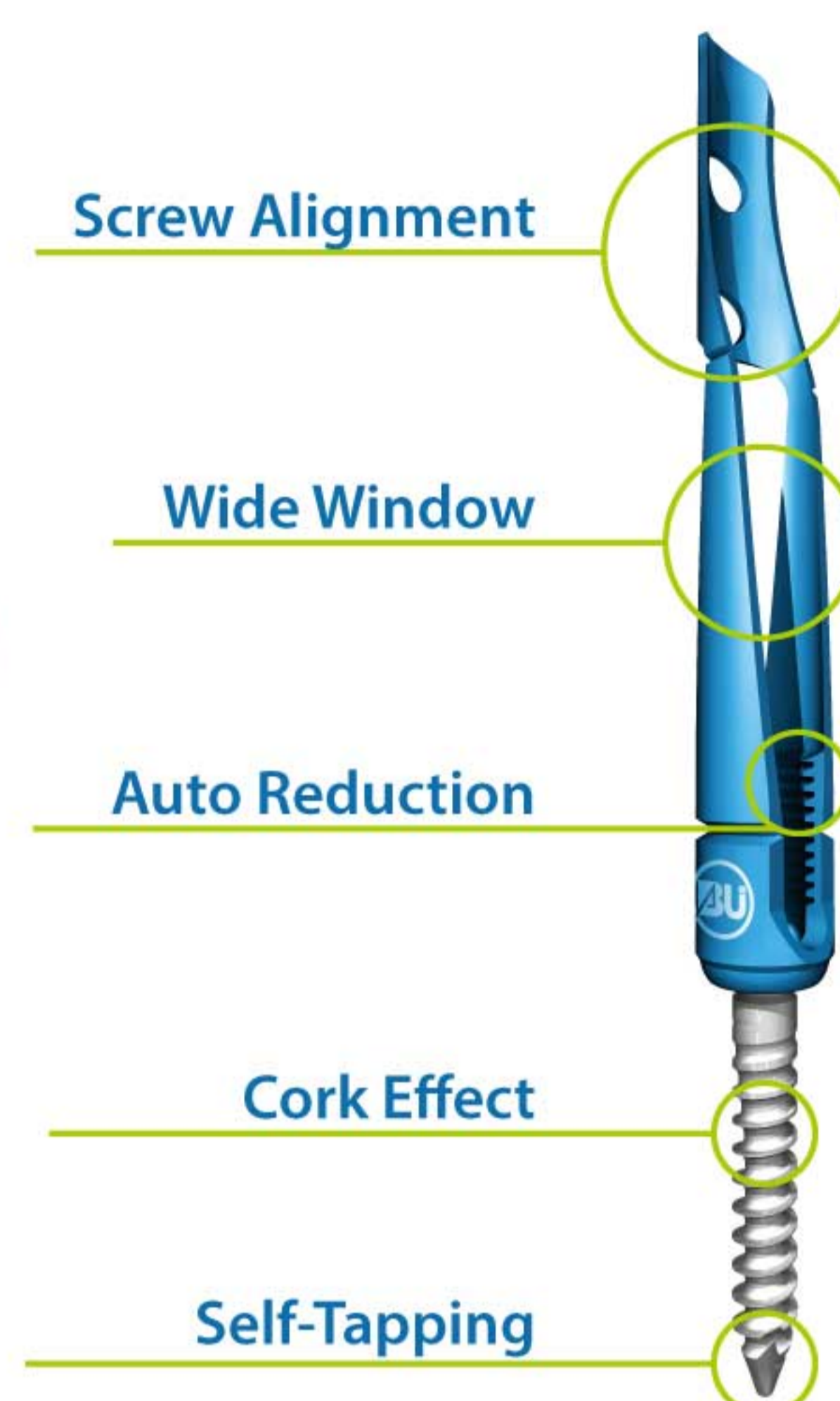




- The half pipe design is focusing on having smaller incisions at lumbosacral area. The ideal MIS Technique, one screw per incision, left patients with multiple wounds, which is similar to the picture shown on the left side. With Nova Minimal Invasive Systems, surgeons will be able to decrease the number of incisions, and have every process needed in the meaning of decompression at only 1 incision per each side.



- Nova System is reducing the incisions and giving surgeons a better in situ view with mini-open style approach. The picture shown on the above, with a smaller incision, Nova System is still capable of implanting the same amount of screws and cages.
- Rod insertion is always an issue when it is percutaneously. Companies provide muscle dilator for clearing the passway in between the tubes. As of Nova System, this is not an issue due to the mini-open approach. The wide window gives users a great vision of the passway during the process of rod insertion. This system is capable of switching between percutaneous and mini-open method during the surgery.



### Design Rationale

- One-piece implant design reduces the surgery time by eliminating the installation of the sleeves. Decreases the chance of infection due to less contact with reused tools.
- Reduction ready, maximum up to grade 2 spondylolisthesis of reduction capability.
- Wide window for visibility and rod insertion.
- Self-tapping and Self-drilling are made for faster implantation.
- Cork effects with the assist of cannulated screws, give users a better and secure surgical experience.

## ReBorn Essence Nova Spinal Fixation System

### Poly Axial Screw

	Blade Length(mm)	Diameter(mm)	Length(mm)
663-4530Y ~ 663-8060Y	100	4.5 - 8.0	30 - 60



### Pre-Bent Rod

	Radius	Diameter(mm)	Length(mm)
320-5504C ~ 320-5525C	100	5.5	40 - 250





Tools

Cannulated Awl 3 in 1  
**405-0502**



5mm Hex Screw Driver  
**409-0829**



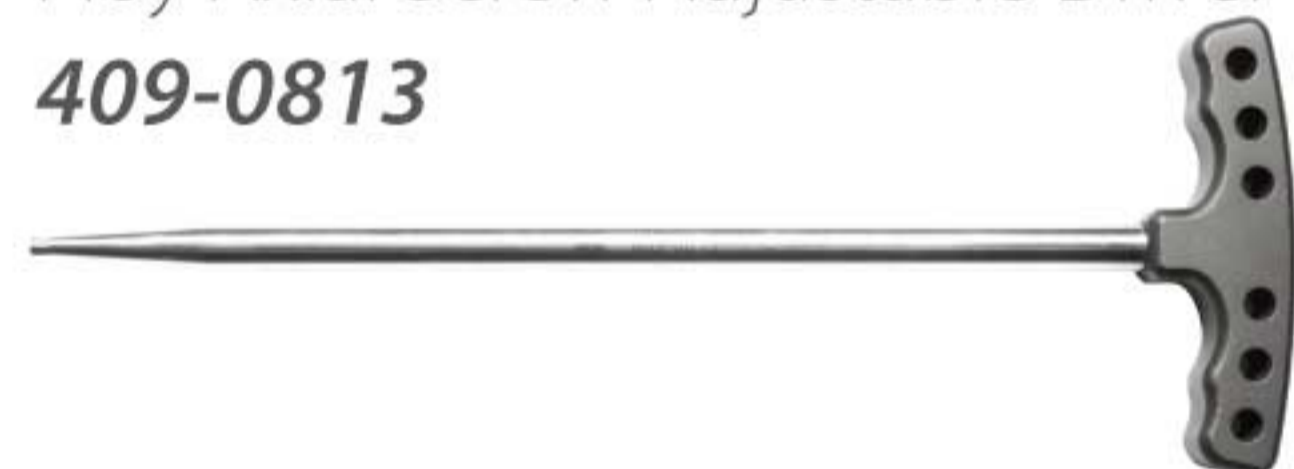
Compression Device  
**405-0903**



1.5mm Guide Pin  
**409-3115**



Ploy Axial Screw Adjustable Driver  
**409-0813**



Distraction Device  
**405-0902**



Cannulated 4.5mm / 5.5mm Tap  
**405-0545A**      **405-0555A**



Dilator Sleeves  
**405-0302**



Torque Wrench  
**406-0107**



Cannulated Ploy Axial Screw Driver  
**409-0836**



Anti-Rotator  
**409-3004**



T-Handle  
**405-0101**



Semi-automatic Rod Holder  
**405-0901**



Straight Ratchet Handle  
**406-0103**

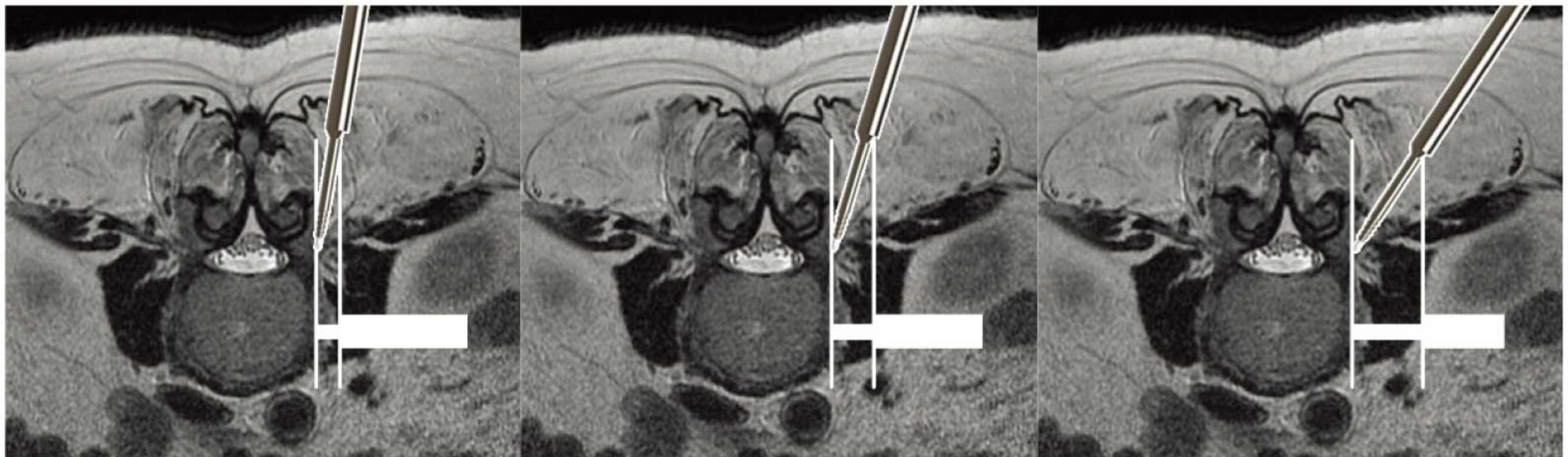


Rod Bender  
**406-1201**



### Unique Tool 3 in 1 Awl

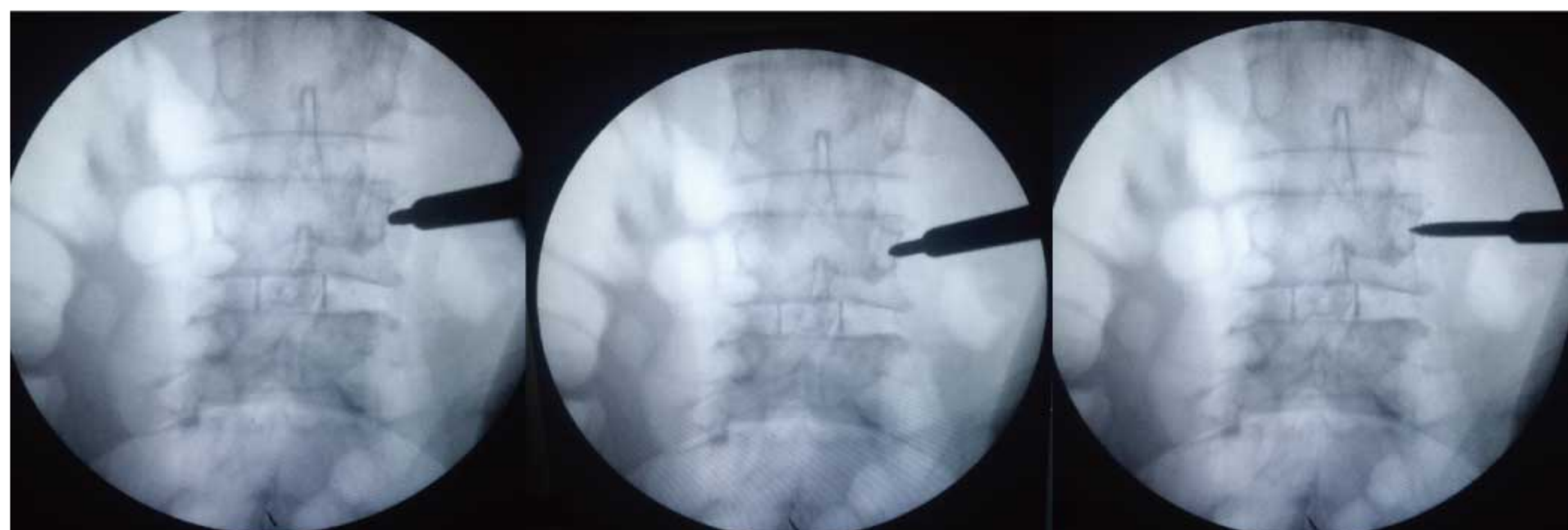
- The unique 3 in 1 tool is made with specific functions to ease out the operation need in finding the pedicles. The function of (A), 5mm in length, is a replaceable tip connecting to the cap, and it works as an awl in traditional pedicle instrument. The function of (B), 10mm in length, is a tapping thread for penetrating through the pedicle, which works as a tap in the traditional pedicle instrument. And the function of (C), the entire design of the tip which is 40 mm in length, works as a probe in the traditional instrument.
- The combination of the three characteristics give users a whole new experience on targeting pedicles with a safer and accurate approach. As of the picture shown below, surgeons are able to identify the pedicle accurately with this special tool.

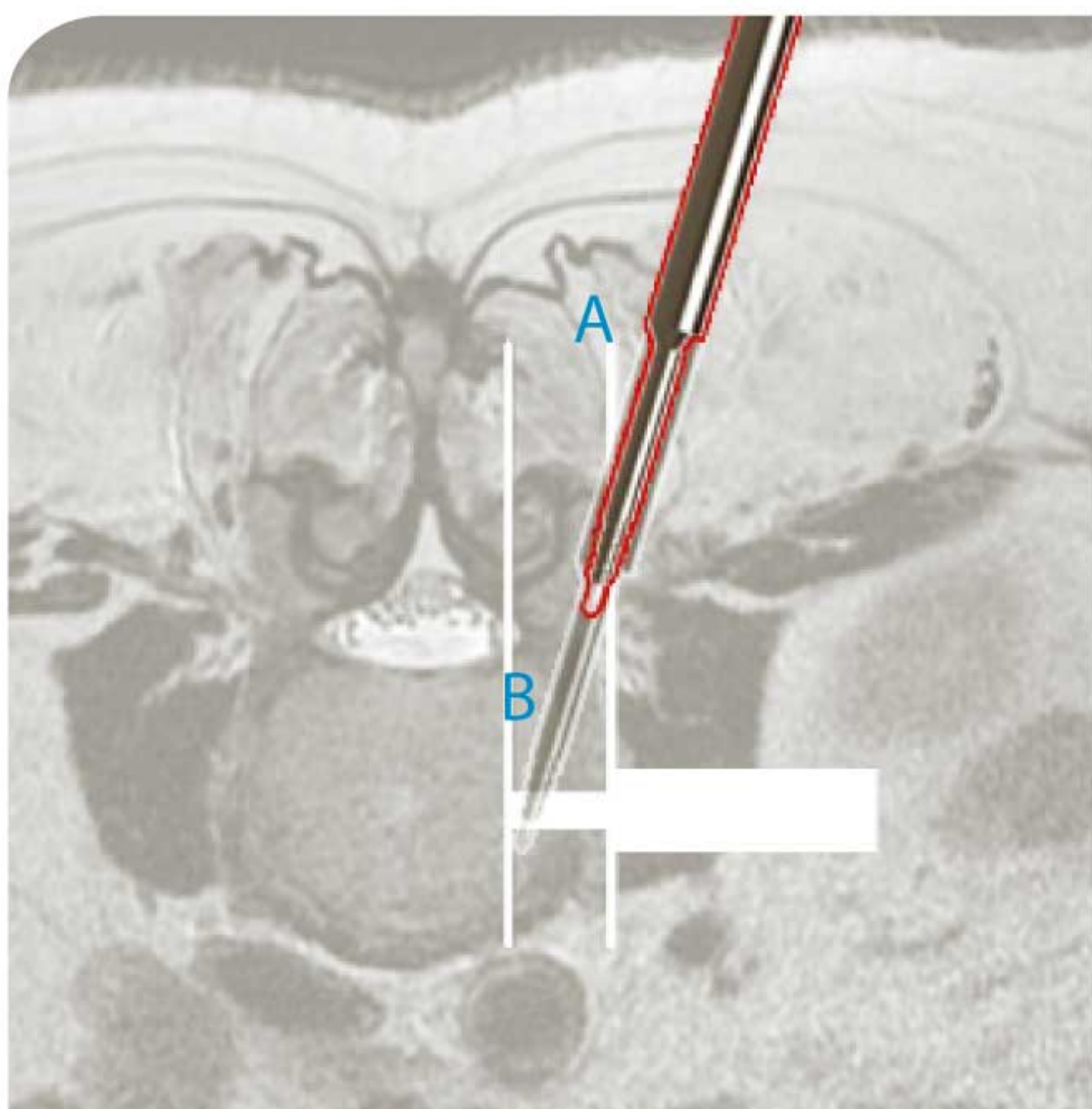


Minor Angulation  
Reflecting shadow is too small

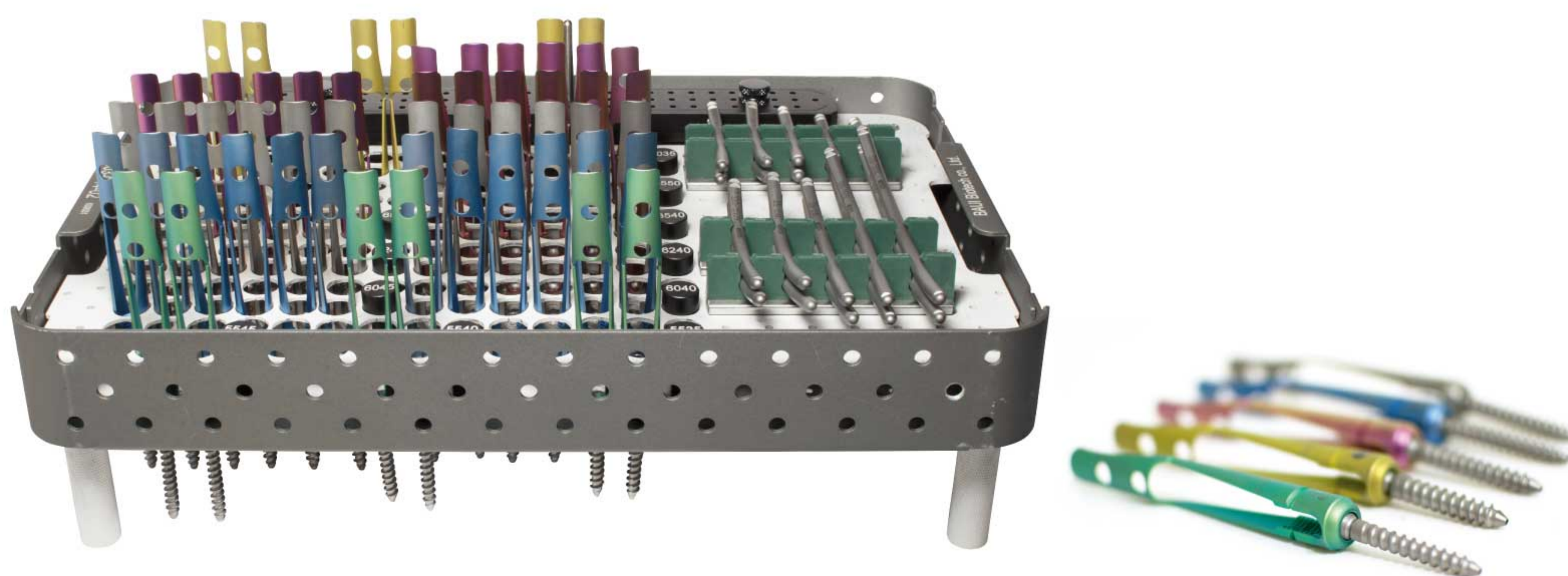
Perfect Angulation  
Reflecting shadow is on target

Wide Angulation  
Reflecting shadow is too far





With the perfect angulation, NOVA Minimal Invasive System applies only anterior and posterior view of the C-Arm to start the first penetrating of the awl. The red outer box (A) shows the first position of the perfect angulation with 3 in 1 Awl, and (B) is the final position. The 3 in 1 Awl with the stopper will stop at the conjunction of transverse process and the facet joint. The 40mm in length is just good enough for passing 1/2 of the vertebrae.



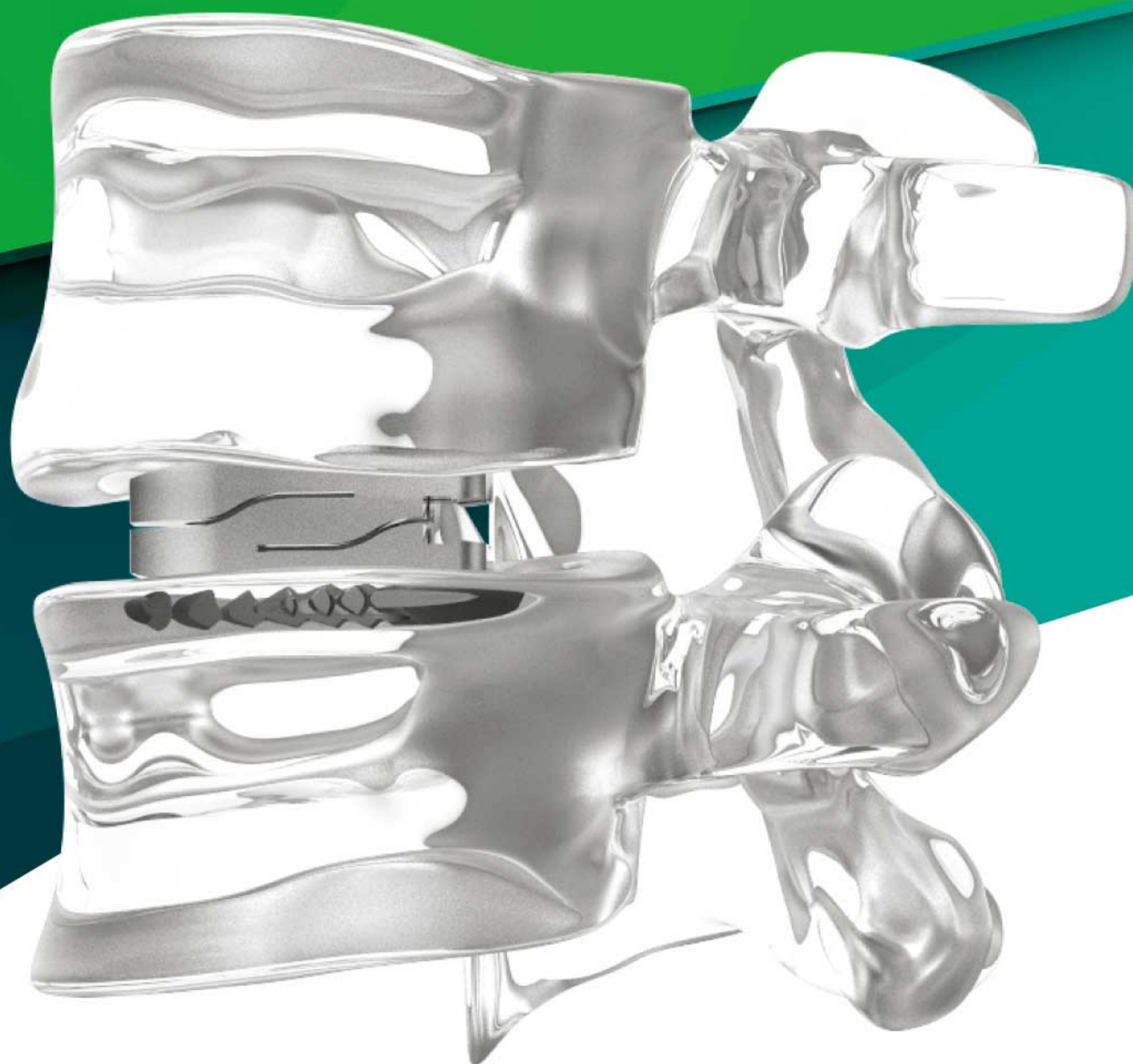
## Conclusion

ReBorn Essence NOVA Minimal Invasive System is the most advanced MIS System on the market. With the unique tools and the optimal approach, users are able to treat most of the spinal diseases with this system, which provides a better lifestyle and appearance for the patient.

Medical surgeries are now becoming minimal invasive in all area. Percutaneous, Endoscope, DaVinci Robotic Arms, and all sorts of other ways to accomplish the meaning of smaller incision and less invasive. In spine, we took one little step ahead, even if it is only 1% better.

# ZBrace

*Intervertebral Fusion Device*



## **Initial Stability Ready**

porous coating and the teeth

## **Load Sharing**

reduce adjacent level stress

## **Fusion Enhanced**

micro-motion



5 6 7 8 9 10



### Device Description

The ReBorn Essence Z-Brace Intervertebral Fusion Device System is designed for the treatment in spinal diseases. The Ti6Al4V material is known for better contact surfaces than PEEK. With porous coating, the contact surfaces provide a better stability. The ReBorn Essence Z-Brace Intervertebral Fusion Device System is able to provide a primary stability with a micro-motion to enhance fusion; meanwhile, reduce the stiffness of the spine. Please refer to indication stated in the manual of the ReBorn Essence Z-Brace Intervertebral Fusion Device System for further information.

### Indication

The ReBorn Essence Z-Brace (Cervical) Intervertebral Fusion Device System is indicated for the use in skeletally mature patients with degenerative disc disease of the cervical spine. Degenerative disc disease is defined with the history and radiographic studies. Patients should have had 6 weeks of non-operative treatment, such as physiotherapy. The ReBorn Essence Z-Brace (Cervical) Intervertebral Fusion Device System shall be used in accompany with autograft or allograft.

The ReBorn Essence Z-Brace (TLIF) Intervertebral Fusion Device System is indicated for the use in skeletally mature patients with degenerative disc disease, disc herniation, spondylolisthesis, instability of the anterior column in association with posterior pathology, fixation across the lumbosacral junction when a 360-degree fusion is desired. The ReBorn Essence Z-Brace (TLIF) must be used with posterior stabilization system.

The ReBorn Essence Z-Brace (PLIF) Intervertebral Fusion Device System is for the stabilization and fusion of the spine following the correction of adult spinal deformity. Other indication including foraminal stenosis, disc herniation, spondylolisthesis, retrolisthesis, scoliosis, failed previous fusions, discogenic low back pain, fractures, and trauma. The ReBorn Essence Z-Brace (PLIF) must be used with posterior stabilization system.

## ReBorn Essence Z-Brace Cervical Intervertebral Cage

### Z-Brace Cervical Intervertebral Cage

	Height(mm)	Length(mm)
848-05133 ~ 848-10133	5 ~ 10	13



### Tools

Z-Brace Cervical Trial Remover  
**218-0641**



Z-Brace Cervical Implant Driver  
**218-0817**



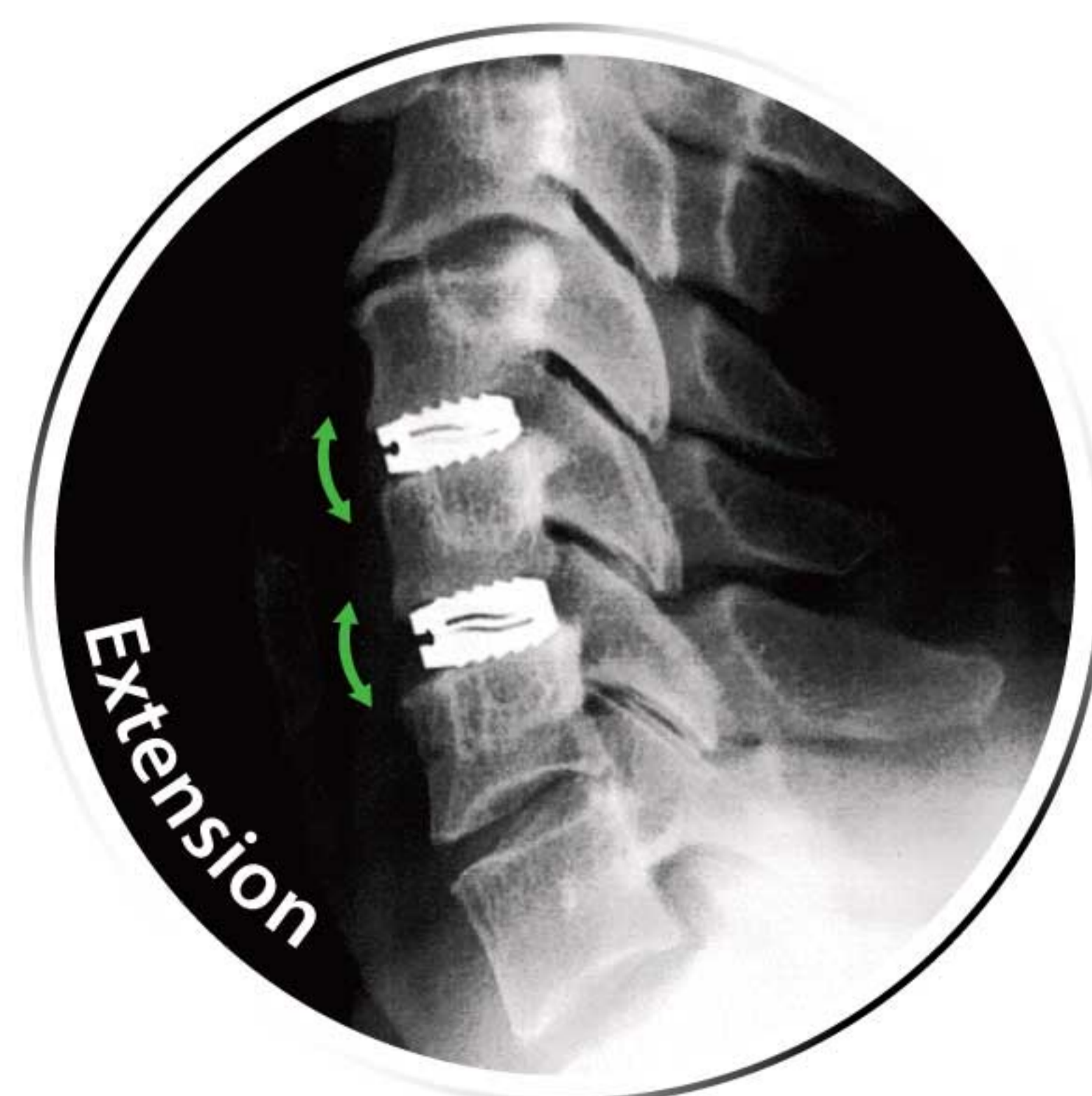
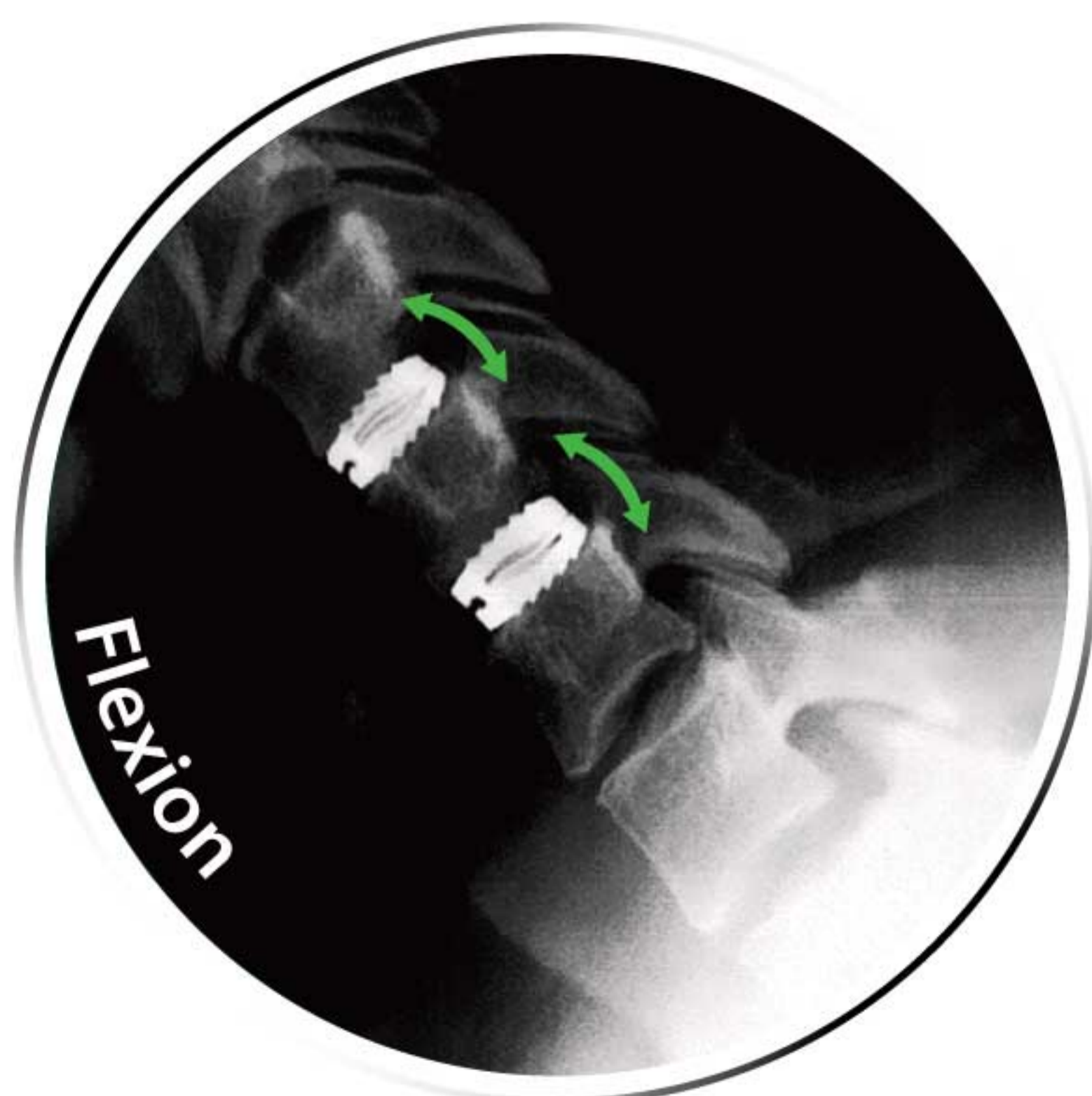
Z-Brace Cervical Trial  
**218-0645 ~ 218-0650**



### Contraindication

The ReBorn Essence Z-Brace (Cervical, TLIF, PLIF) Intervertebral Fusion Device System is not usable with the patients with severe osteoporosis, infection, metal allergy, severe metabolic bone disease, or any entity or condition that totally precludes the possibility of fusion.

In addition, some of the lifestyle of the patients, will be affecting the stress on the implants and causing the failure of the implantation, such as their occupation, overweight, mental illness, alcoholism, or drug abuse.



## Introduction

Ti6Al4V is the most bio-compatible material among all the materials that are used for implants. With the hardness of Ti6Al4V, the material inventor has invented PolyetherEtherKetone (refer as PEEK) for the material of cage. After years of studies, PEEK material has been discovered with low antibacterial effect, and titanium has better antibacterial effect due to its characteristic. In the study, titanium is found with 1.5-time antibacterial effect compared to PEEK<sup>1</sup>. The rough surface of the titanium provides a better environment for the newly formed bones to grow onto the cages. Rough surface attracts bones and smooth surface attracts tissue<sup>1</sup>.

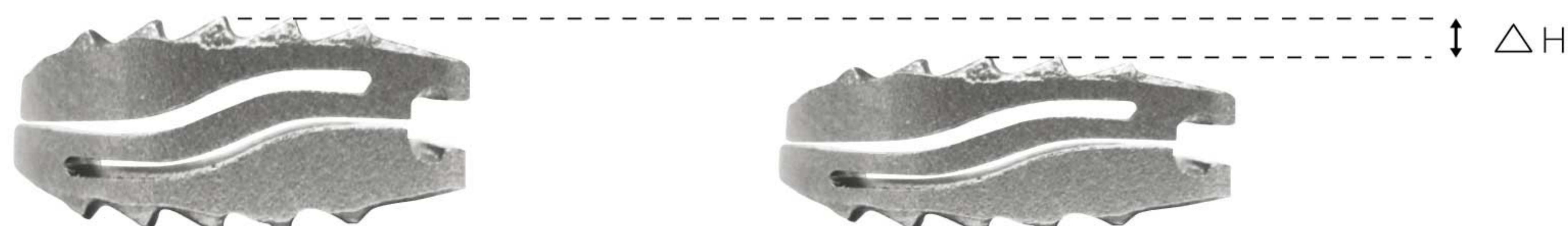
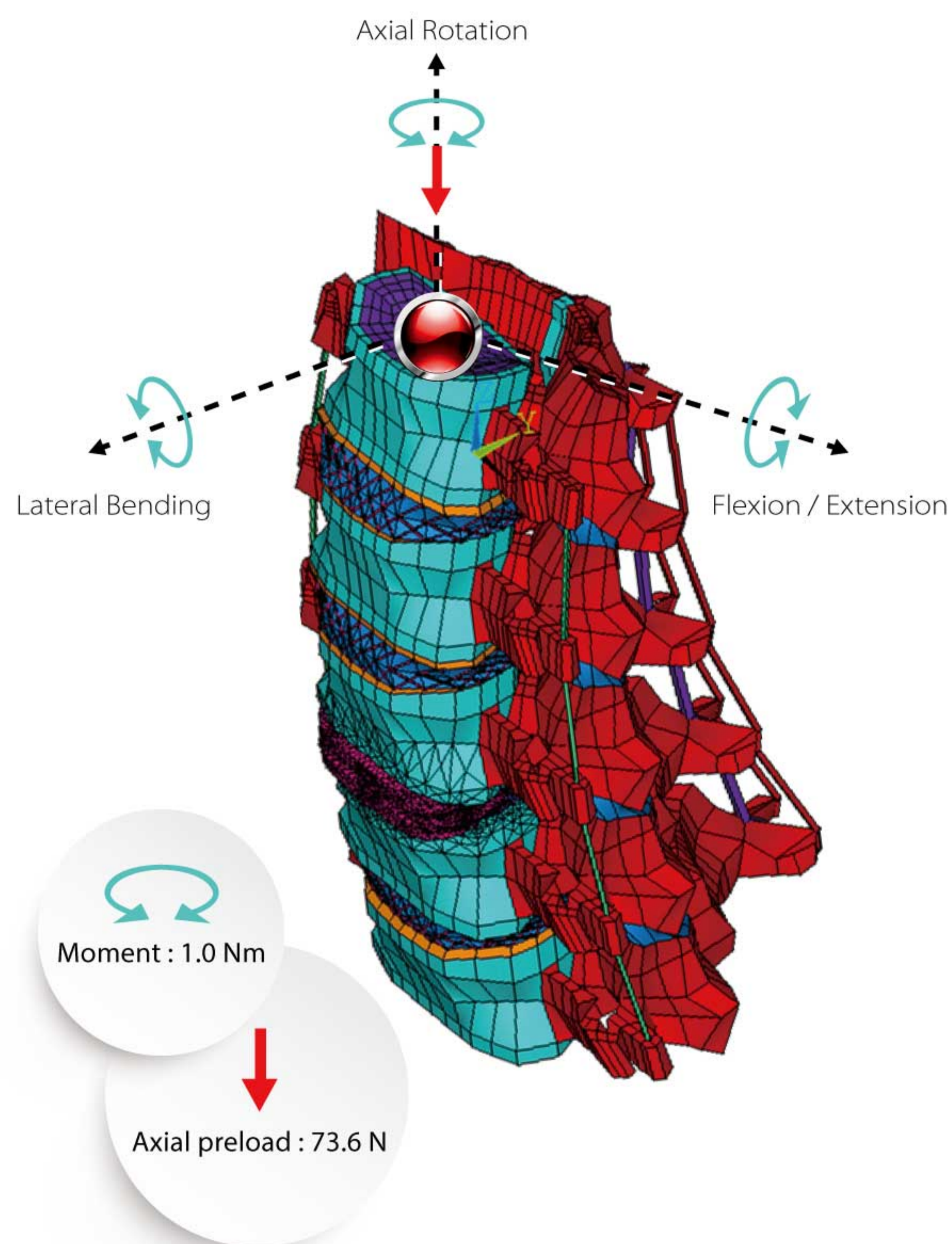
### Reference :

1.T.J. Webster, A.A. Patel, M.N. Rahaman, B. Sonny Bal. Anti-infective and osteointegration properties of silicon nitride, poly(etheretherketone), and titanium implants. Acta Biomaterialia 2012, 8(12):4447-54.

## Design Rationale

Following the Wolff's Law, the ReBorn Essence Z-Brace Intervertebral Fusion Device, is designed to enhance fusion with the capability of maintaining the height of the intervertebral disc space. A Titanium compound with a Z-shape cut provides micro-motion, which enhances the fusion by giving the flexural load towards the segment need to be fused.

As for the micro-motion provided by the cage, it releases the intradiscal pressure by the means of decreasing the chance of adjacent segment disease from happening. With the technology of surface treatment, the ReBorn Essence Z-Brace Intervertebral Fusion Device provides greater surface contact and creates an ideal growth environment for bone formation.



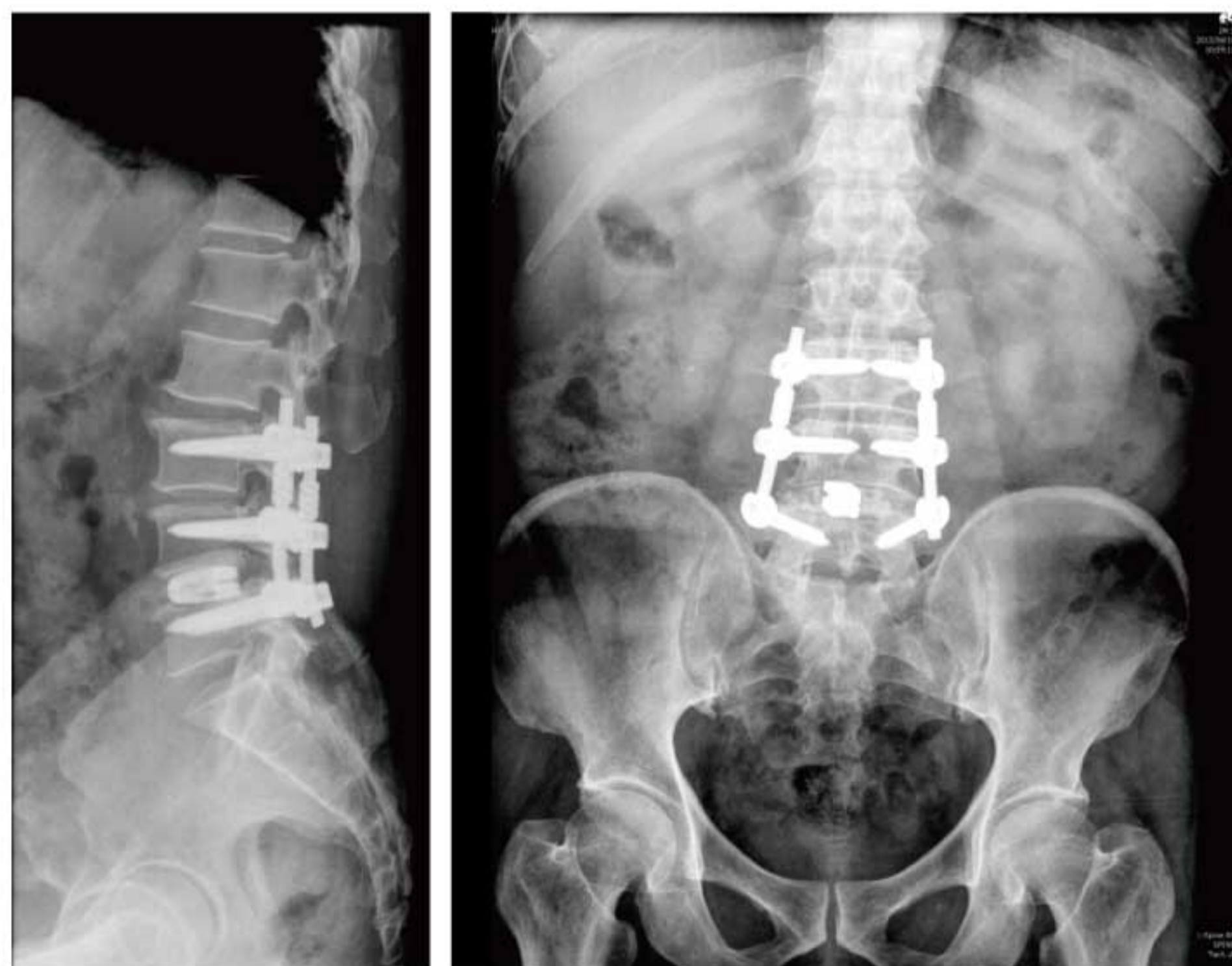
## Unique Tools

The ReBorn Essence Z-Brace Intervertebral Fusion Device comes with an unique implanting tool. Prior to the installation of the drivers, the device sustains the normal position. After the driver is installed, the device will then become more bullet shape, which will be easier for users to implant the device. When the device is in position, the driver can be released. The tip of the cage will create a distraction of the intervertebral area.



## Conclusion

ReBorn Essence Z-Brace Intervertebral Fusion Device is the most advanced fusion device system on the market. With the ability of micro-motion and the osteoconduction through the material, the treatment of degenerative disc disease becomes easier, which provides a better lifestyle for the patients.



BAUI Biotech is an innovative company with the passion to improve and discover new ways for treating spine diseases. Z-Brace is the most advanced type of cage that is unprecedented in the world.

ReBorn Essence Z-Brace Lumbar Intervertebral Cage



Z-Brace Lumbar Intervertebral Cage

	Height(mm)	Length(mm)
948-08243 ~ 948-14243	8 ~ 14	24
948-08283 ~ 948-14283	8 ~ 14	28

Tools

Square Shaver  
420-1106



T - shape Driver  
420-1720



Lumbar Bone Graft Template  
420-3203



Shaver  
420-0802L / 420-0802R



L - shape Driver type 1  
420-1721



Bone Graft Impactor  
420-3304



5mm / 8mm Dura Retractor  
420-3501 / 420-3502



L - shape Driver type 2  
420-1723



Sliding Hammer  
420-0401



7mm ~ 13mm Shaver  
420-0807A ~ 420-0813A



Angulation Impactor  
406-3203



T-Handle  
406-0101



8mm ~ 14mm Trail  
420-0408A ~ 420-0414A



Z-Brace Final Impactor  
420-3307

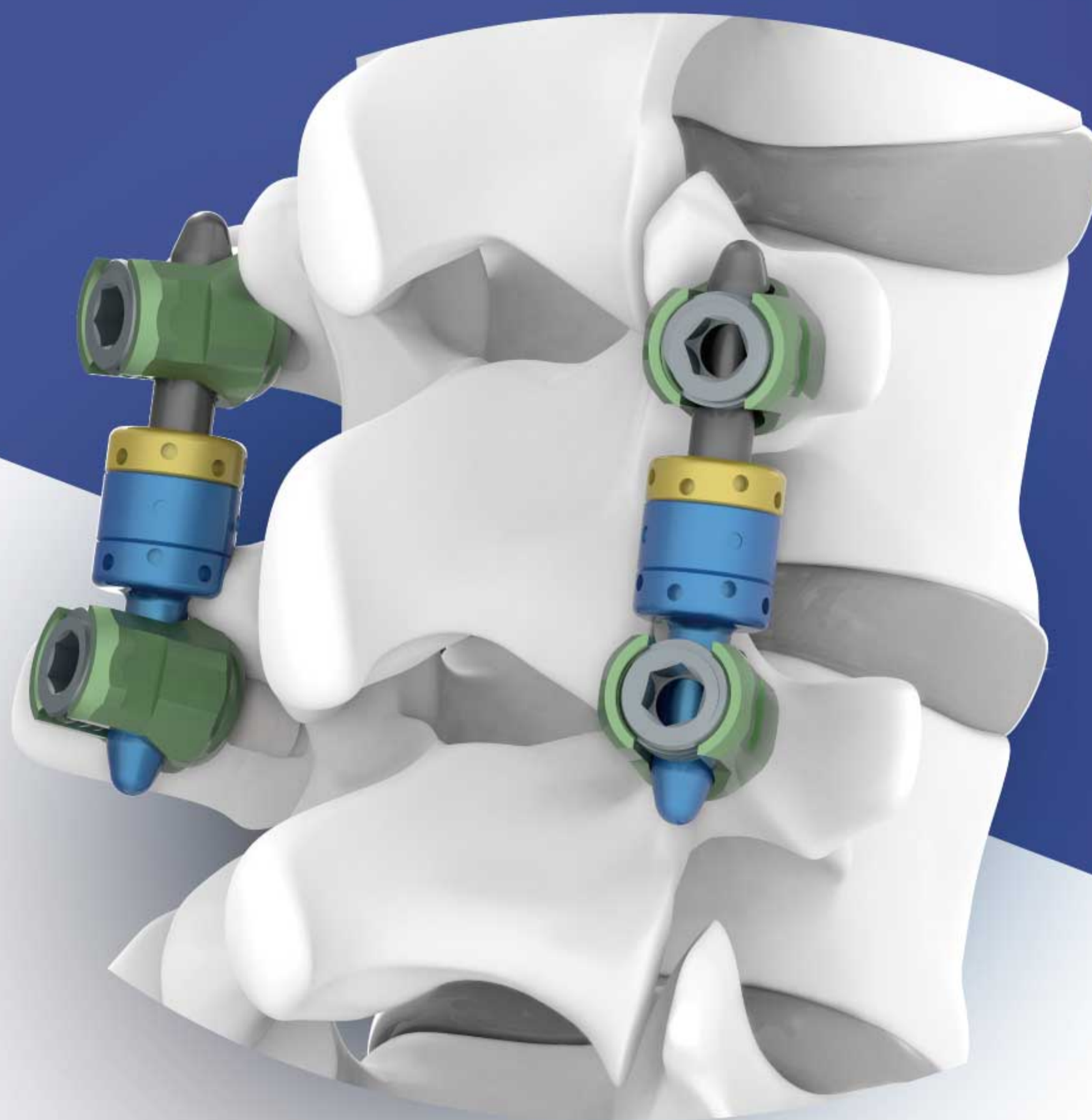


Impacting Cap  
420-1720-9



# AWESome ReBorn Essence

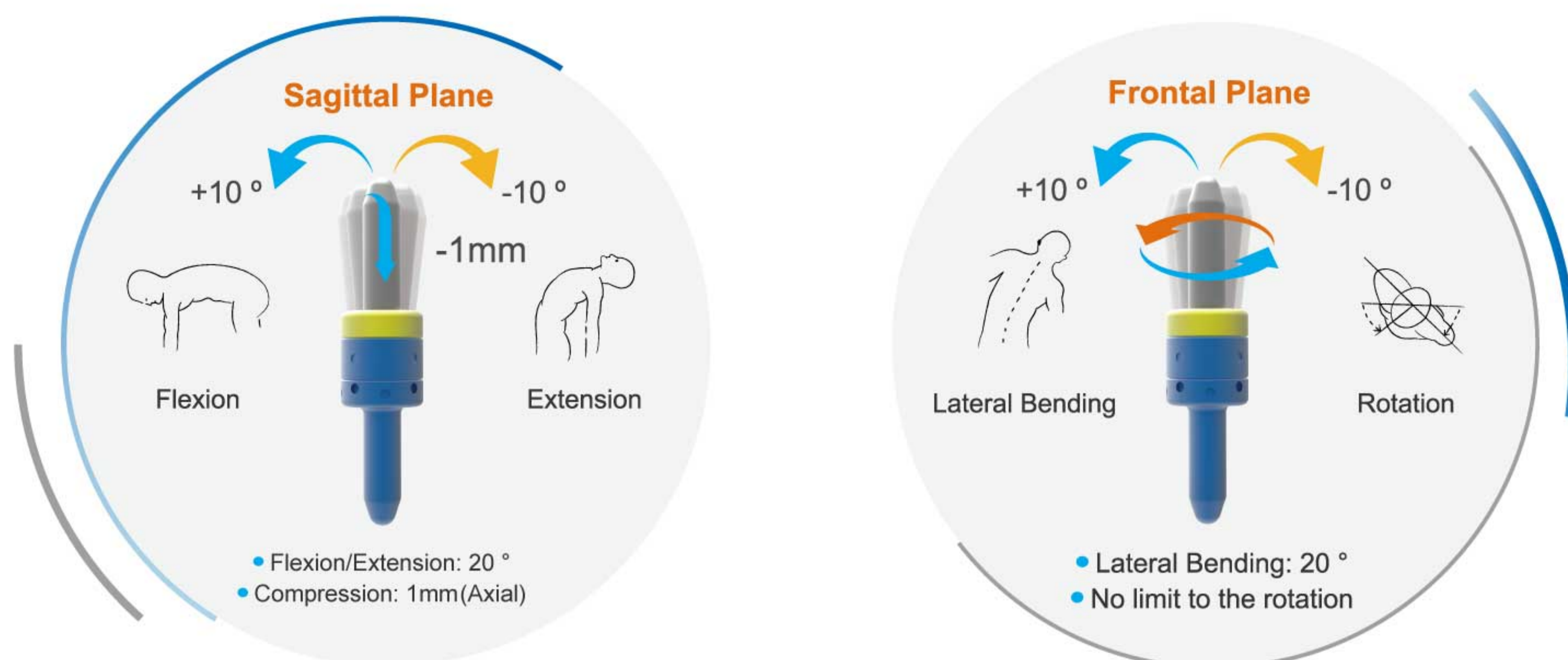
## Dynamic Connection Rod



- **Stabilize unstable segment with limited motion**
- **Provide load transmission through anterior column for dynamic fusion**
- **Prevent ASD with a hybrid construct**

The ReBorn Essence AWESome Connection Rod System is a semi-rigid fixation system. This system provides load sharing when used alone and dynamic fusion when used with a cage. This is specifically designed for the perfection of balance between motion and stability.

It allows semi-constrained motion at the treated segment of the spine.

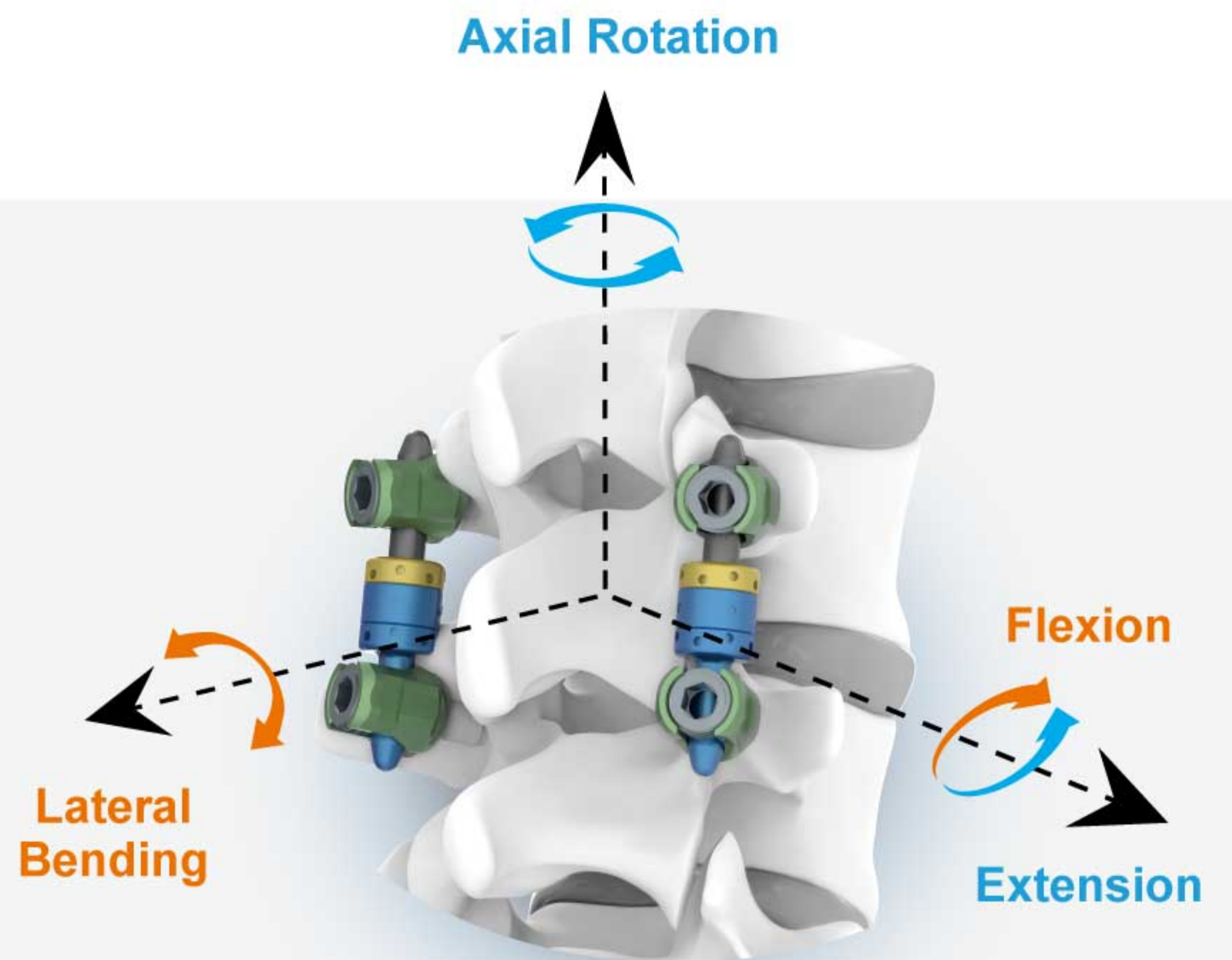


## Features and Benefits

- **5.5mm diameter Titanium rod**
  - Familiar surgical technique
- **Controlled micromotion in all the 3 planes**
  - Stabilizes the spine
- **Axial compression**
  - Stimulates the interbody space to promote fusion, by the principles of Wolff's law
  - Decreases stress on bone/screw and screw/rod interfaces which is especially beneficial to elderly patients
  - Prevents stress-shielding at the instrumented level and overloading at the adjacent level
- **ReBorn Essence Awesome Connection Rod can be used in conjunction with the following BAUI Spine Systems**
  - ReBorn Essence NOVA Spinal Fixation System
  - ReBorn Essence Lumbar Fixation System

## Principles of dynamic stabilization

- Decreased stiffness compared to traditional rigid stabilization
- Increased load sharing with surrounding anatomical structures



## Indications

- Spondylolisthesis and/or spondylolysis
- Degenerative disc disease
- Spinal stenosis with or without radiculopathy
- Facet osteoarthritis
- Kyphosis
- Failed previous fusion (pseudarthrosis)

## Contraindications

- Severe osteoporosis
- Spinal fracture or dislocation
- Spinal deformities
- Spinal tumor
- Infection
- Morbid Obesity (BMI >40)

## ReBorn Essence AWESome Connection Rod

### Single semi-rigid rod

REF	Diameter(mm)	Length(mm)
321-5505C ~ 321-5513C	5.5	55 ~ 130



### Tools

Trial Implant Holder  
**409-0601**



Rod Holder  
**409-1301**



Anti-Rotator Pliers  
**409-3005**



Handle  
**406-0104**



80 mm~130mm Trial Implant  
**409-0605 ~ 409-0613**



# Anterior Cervical Fixation System



## Low Profile

2 mm thickness with 16 mm - width with anatomical fit pre-contoured

## Locking Ready

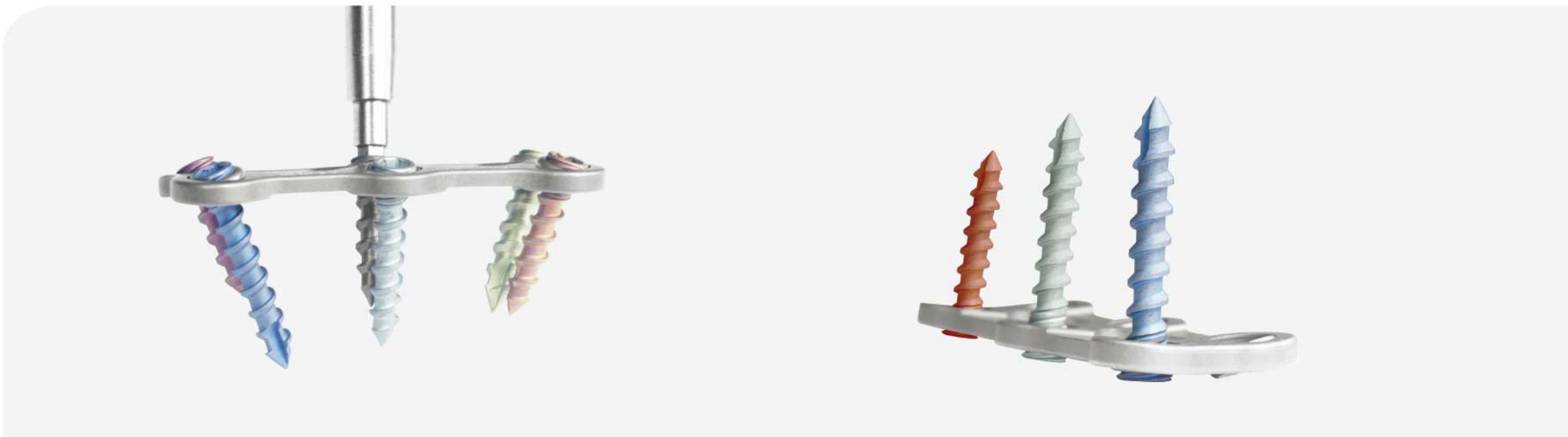
C-ring built on the plate with locking mechanism

## Wide Angulation

Up to 14 degree of screw implantation



# Anterior Cervical Fixation System



## Device Description

- The ReBorn Essence Anterior Cervical Fixation System is a low profile cervical plate. With a 2 mm-thickness and the pre-contoured plate, ReBorn Essence Anterior Cervical Fixation System gives surgeons the best user experience during the operation. Multiaxial C Ring locking device gives users a choice of 14-degree angulation, and secure implantation to prevent screws from backing out. Minimal width of 16 mm provides a better visualization and a possibility of decreasing the size of incision. The Titanium compound is a proven material for the use as an implantation material in Human. Please refer to the use of indication stated in the manual of the Reborn Essence Anterior Cervical Fixation System.

## Introduction

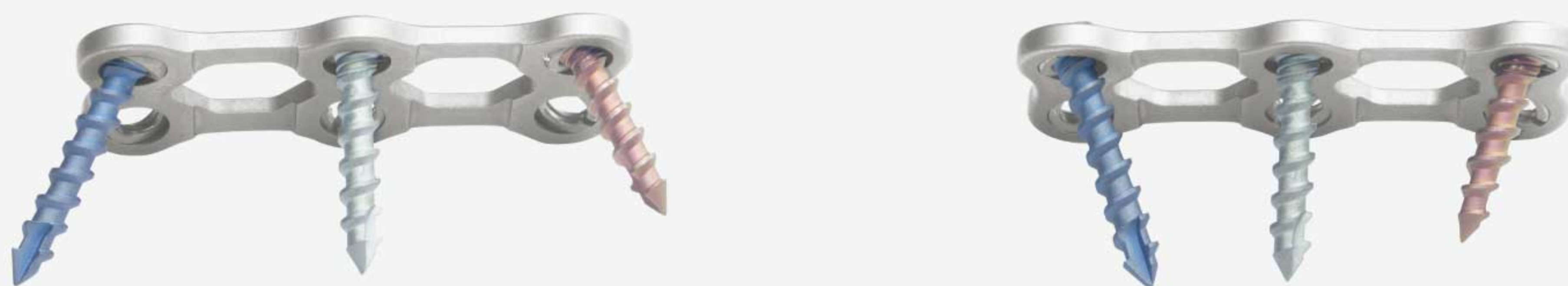
Anterior Cervical plates are widely used to treat cervical diseases. It is mainly focused on the immobilization of the cervical spine prior to the occurrence of solid fusion. The ReBorn Essence Anterior Cervical Fixation System is intended to be used with spine fusion with allograft, autograft, or cages.

## Indication

- The ReBorn Essence Anterior Cervical Fixation System is intended to be used as an anterior interbody screw fixation of the cervical spine only. This is a temporary stabilization prior to a solid fusion of the anterior cervical spine from C2 to C7. The common indication for the systems are as follows: degenerative disc disease, trauma, fracture, dislocation, spinal stenosis, cervical myelopathy, deformities, curvatures, scoliosis, kyphosis, lordosis, tumor, pseudoarthrosis, and failed previous fusion.

## Contraindication

- In the condition which is absence or compromise of significant stabilizing elements. Patients with severe osteoporosis, infection, metal allergy, severe metabolic bone disease, or any entity or condition that totally precludes the possibility of fusion.



### Contraindication

- In addition, some of the lifestyle of the patients, will be affecting the stress on the implants and causing the failure of the implantation, such as their occupation, overweight, mental illness, alcoholism, or drug abuse.

### Design Rationale

The ReBorn Essence Anterior Cervical Fixation system is designed with simplicity, security, and optimal anatomical fit. With 2-mm thickness, the ReBorn Essence Anterior Cervical Fixation System can decrease the sensation of foreign body. 3D pre-contoured structure provides optimal anatomical fit. Users are able to use the plates without any bending or bend the plate when the curvature is more extreme. The built-in C-Ring is made to secure the screws and provide  $\pm 7$  degrees of angulation.

### Conclusion

The ReBorn Essence Anterior Cervical Fixation System is the most optimal cervical plate on the market. With the low profile, locking mechanism, and wide angulation, users are able to treat most of the spinal diseases with this system, which provides a better lifestyle for the patients.





## ReBorn Essence Anterior Cervical Plate System

### Cervical Plate

	Length(mm)	Width(mm)
465-26A ~ 465-54A	26 ~ 54	16
465-58A ~ 465-90A	58 ~ 90	16



### Cervical Screw

	Length(mm)	Diameter(mm)
422-3012A ~ 422-3018A	12 ~ 18	3.0
422-3512A ~ 422-3518A	12 ~ 18	3.5



### Tools

1.8mm Awl For Locking Plate  
**202-0218**



2.5mm Hex Screw Driver  
**202-0825**



Plate Holder  
**202-1301**



1.8mm Drill Bit For Locking Plate  
**202-1918**



Plate Bender  
**202-1201**



2.5mm Tap For Locking Plate  
**202-0525**



Handle  
**202-0101**



# Posterior Cervical Fixation System

## Poly-axial

Top loading, easy for rod insertion

## Wide Angulation

40° medial lateral 80° cranial caudal

## Reduction Ready

Side craving for reduction tools



# Posterior Cervical Fixation System

## Device Description

The ReBorn Essence Posterior Cervical Fixation System is designed for the treatments in spinal diseases. This system is designed to stabilize and promote the fusion of the cervical spine and occipito-cervical junction. Please refer to the use of indication stated in the manual of The ReBorn Essence Posterior Cervical Fixation System.

The ReBorn Essence Posterior Cervical Fixation System is not intended to be used with other systems of posterior cervical fixation system.



## Indication

The ReBorn Essence Posterior Cervical Fixation System is intended to treat cervical spine instability including trauma, stenosis, dislocation, deformities, and other diseases requiring posterior stabilization. Tumors and infections can be treated with cross level implantation. The combination of anterior fusion stabilization is recommended.

## Contraindication

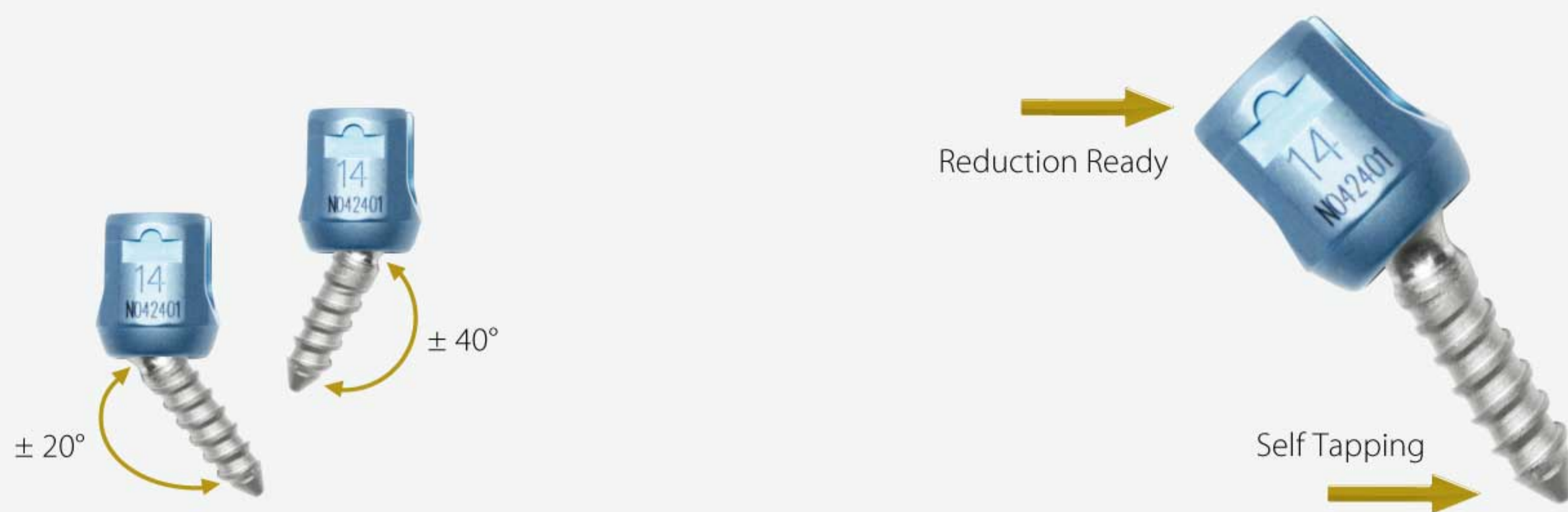
In the condition which is absence or compromise of significantly stabilizing elements. Patients with severe osteoporosis, infection, metal allergy, severe metabolic bone disease, or any entity or condition that totally precludes the possibility of fusion.

In addition, some of the lifestyle of the patients, will be affecting the stress on the implants and causing the failure of the implantation, such as their occupation, overweight, mental illness, alcoholism, or drug abuse.

## Introduction

The ReBorn Essence Posterior Cervical Fixation System consists of poly-axial screw, smooth rod, occipital plate rod and occipital plate. Within the system, the products can be used in combination.

Poly-axial screws can be used along with rods, or with the occipital plates. The other combination is poly-axial screw with occipital rod plate system. Surgeons are able to interchange in between two systems according to the need of the surgery. With special situation, this system also provides connector blocks and side rods.



## Design Rationale

The ReBorn Essence Posterior Cervical system poly-axial screw is specially designed with 80° cranial caudal angulation. This makes lateral mass surgical easier due to the wide angulation of the implanting site. Self-tapping and self-drilling characteristics ease out the process of surgical technique. 40° medial lateral angulation gives the construct a more stabilized environment. The connecting block with 3.5mm diameters is available for recurrent symptoms or from lateral mass to pedicle implantation. The connecting block with both 3.5 mm and 5.5 mm diameters is available for cervicothoracic interchange area. Side rods are specialized for extreme angulation of two screws.

## Unique Tools

Specialized reduction tools are designed for extreme reduction for the poly-axial screws.

## Conclusion

ReBorn Essence Posterior Cervical Fixation System is the easiest system for posterior cervical fixation system.

With multiple components and various combinations, the system is simple, secure, and sagacious.



## ReBorn Essence Posterior Cervical Fixation System

### Multi axial Screw

	Length(mm)	Diameter(mm)
106-3510 ~ 106-3534	10 ~ 34	3.5



### Pedicle Long Screw

	Length(mm)	Diameter(mm)
106-3510A ~ 106-3534A	10 ~ 34	3.5



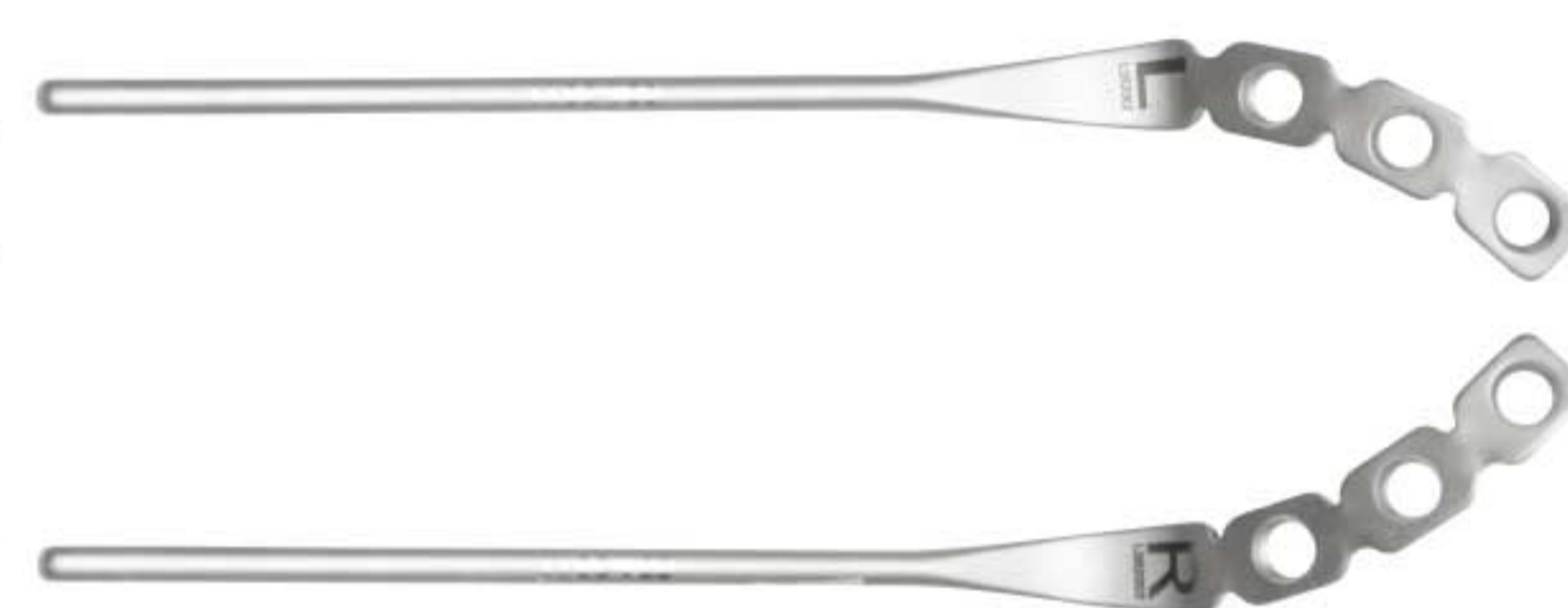
### Occipital Plate

	Length(mm)	Width(mm)
740 - 3555	55	29
740 - 3560	60	29
740 - 3565	65	29



### Occipital Rod Plate

	Length(mm)	Diameter(mm)
604 - 3511	110	3.5
604 - 3611	110	3.5



### Smooth Rod

	Length(mm)	Diameter(mm)
600-3503 ~ 600-3517	30 ~ 170	3.5



### Connection Rod

	Length(mm)	Diameter(mm)
320 - 1217	300	3.5 ~ 5.5



### Transverse Link

	Length(mm)	Diameter(mm)
700 - 3570	70	3.5



### Cervical Fixation Screw

	Length(mm)	Diameter(mm)
108-4006 ~ 108-4012	6 ~ 12	4



### Connection Block

	Length(mm)	Diameter(mm)
421 - 3535B	14.8	3.5
421 - 3535B	16.5	3.5



**Tools**

3mm Tap  
**202-0503**



2.5mm Hex Screw Driver  
**202-0825**



Adjustable Drill Guide  
**204-1101**



2.5mm Drill Bit  
**202-1925**



5mm Hex Socket Driver  
**204-2905**



Handle  
**202-0101**



2.5mm Awl  
**202-0225**



5mm Rotator Bar  
**406-3005**



Screw Clamp  
**202-0826**



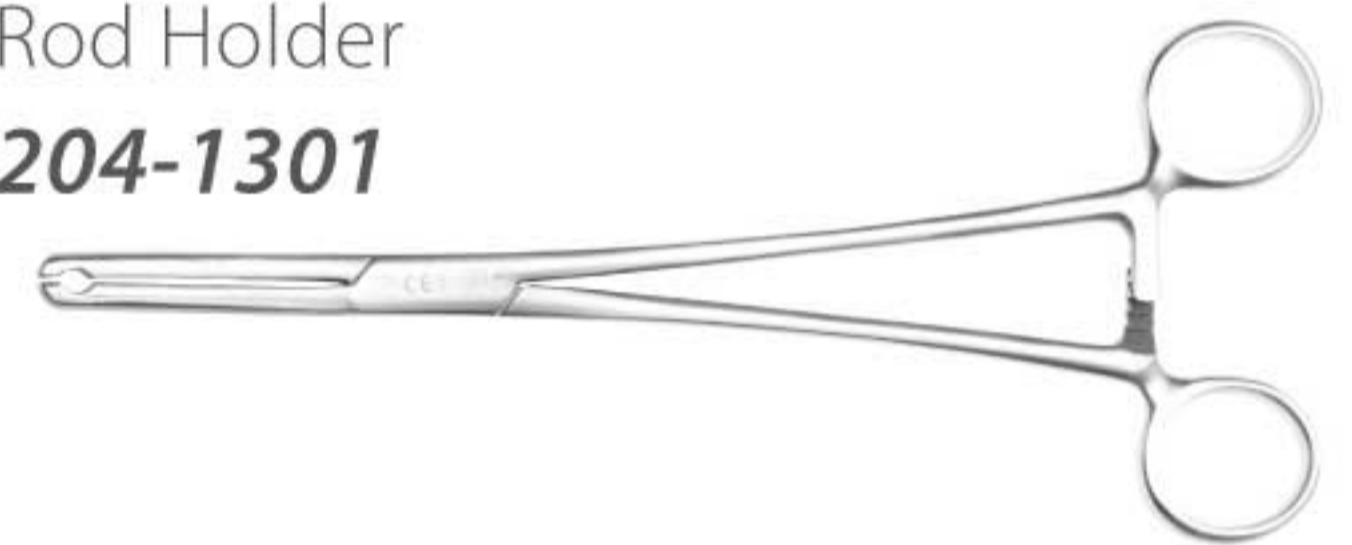
3.5mm Pin Guide  
**204-3135**



Rod Bender  
**204-1201**



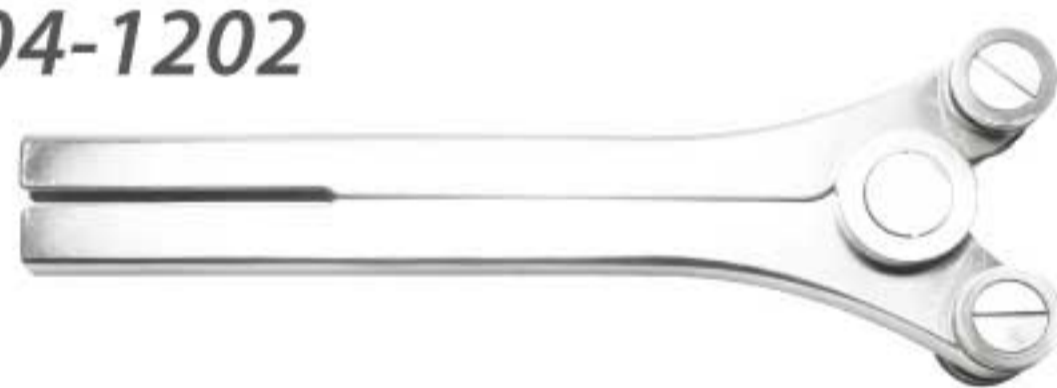
Rod Holder  
**204-1301**



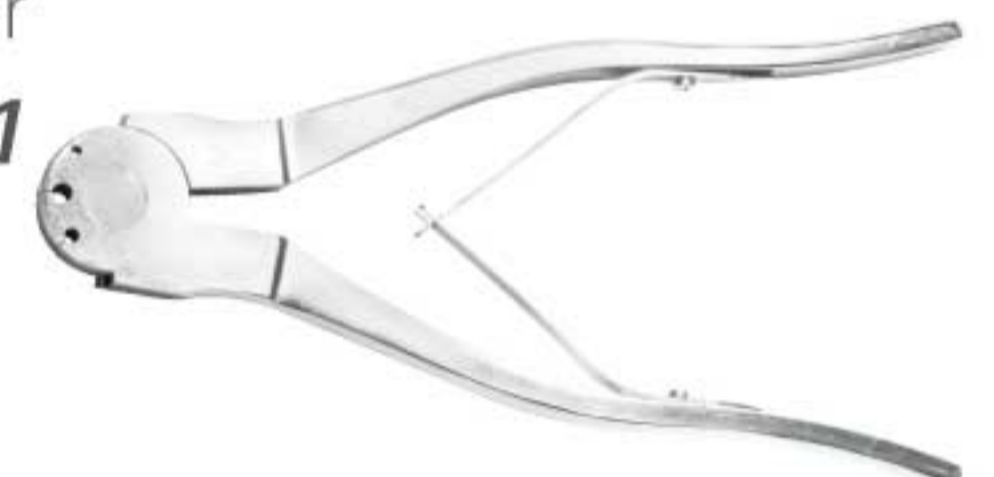
3.5mm Pin Guide  
**204-3136**



Rod Bender  
**204-1202**



Rod Cutter  
**204-2701**



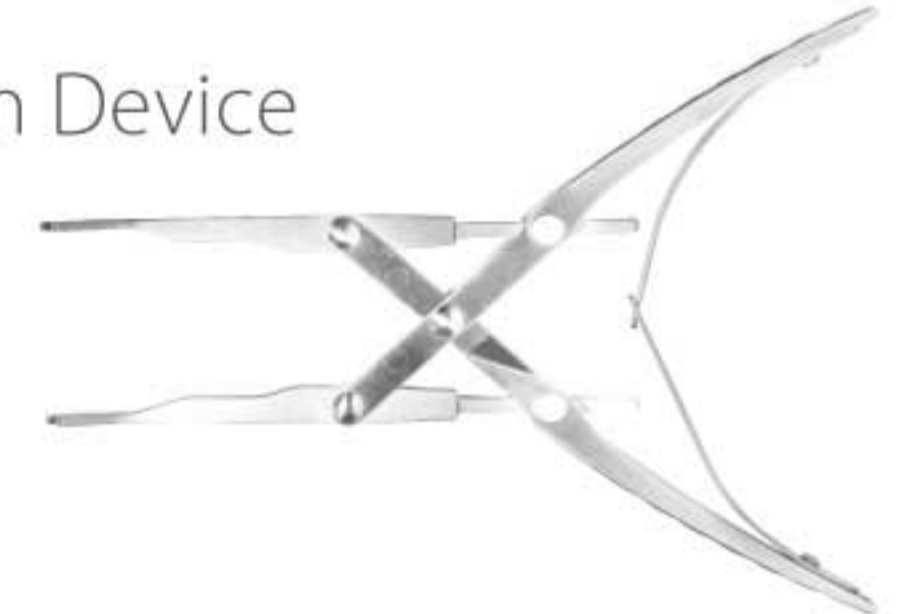
Sensor  
**406-0401**



Rod Template  
**408-3201**



Compression Device  
**204-0901**



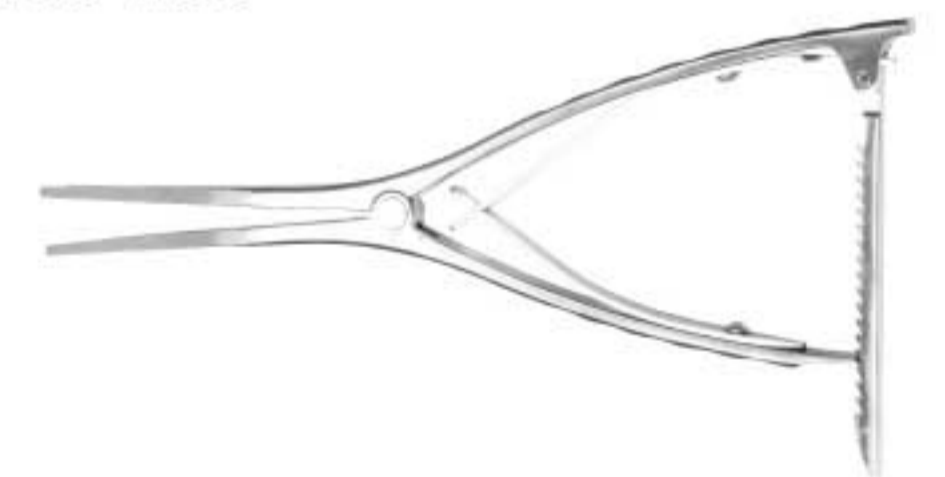
3mm Hex Screw Driver  
**204-0803B**



Anti-Rotator Wrench  
**204-3001**



Distraction Device  
**204-1601**



Poly Screw Driver  
**204-0801**



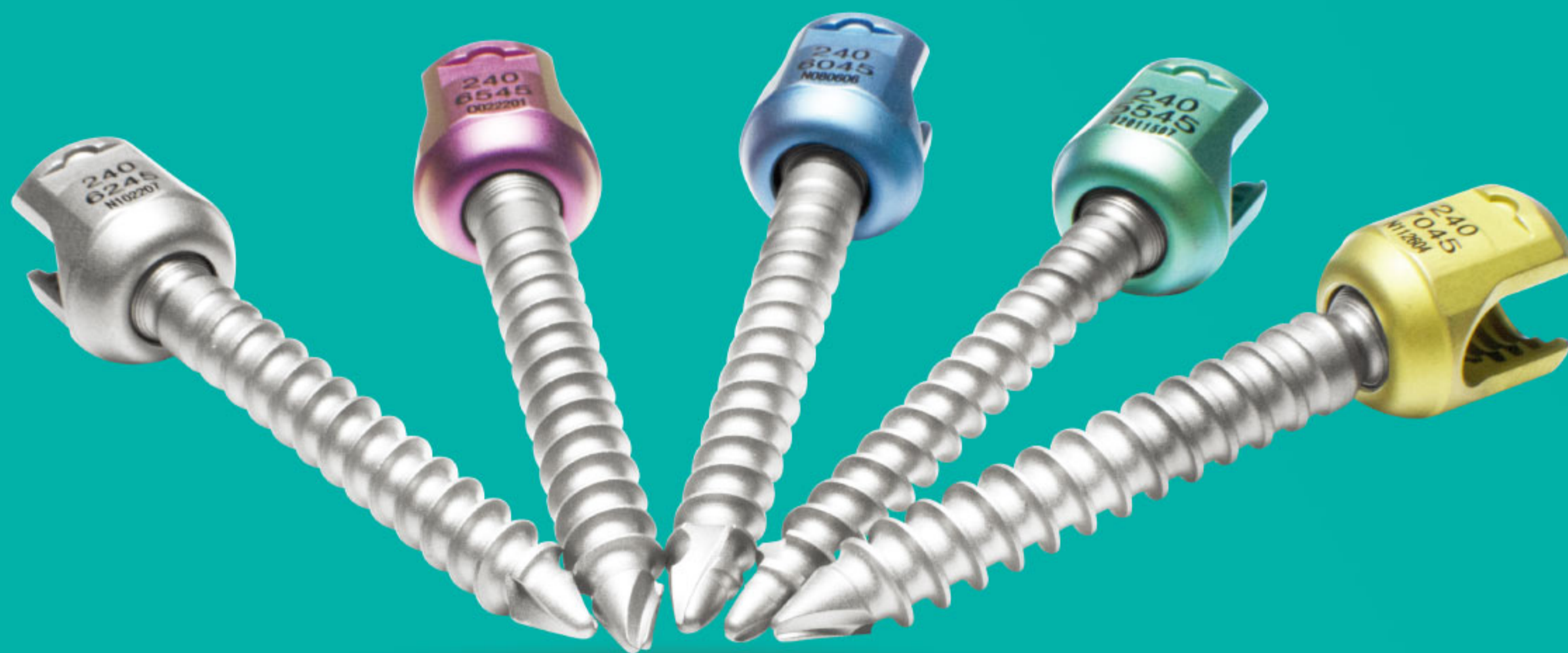
Multi Axial Screw Adjustable Driver  
**204-0811**



Persuader  
**405-0701**



# Lumbar Trans-Pedicle Screw Fixation System



## **Poly-axial**

Top loading, easier for rod insertion.

## **Full Size Range**

0.5 mm increment for diameter of the screw with extra choice of 6.25

## **Reduction Ready**

Double cup size or reduction tools with side carving screw cups.

# Lumbar Trans-Pedicle Screw Fixation System

## Device Description

The ReBorn Essence Posterior Trans-Pedicle Screw Fixation System is designed for the treatments in spinal diseases. This system is designed to stabilize and promote fusion of the thoracolumbar. Please refer to the use of indication stated in the manual of the ReBorn Essence Posterior Trans-Pedicle Screw Fixation System. The ReBorn Essence Posterior Trans-Pedicle Screw Fixation System is not intended to be used with other systems of posterior trans-pedicle screw fixation system.

## Indication

The ReBorn Essence Posterior Trans-Pedicle Screw Fixation System is intended to treat thoracolumbar spine instability including trauma, stenosis, dislocation, deformities, and other diseases requiring posterior stabilization. Tumor and infection can be treated with cross-level implantation. The combination of anterior fusion stabilization is recommended.

## Contraindication

In the condition which is absence or compromise of significantly stabilizing elements. Patients with severe osteoporosis, infection, metal allergy, severe metabolic bone disease, or any entity or condition that totally precludes the possibility of fusion.

In addition, some of the lifestyle of the patients will be affecting the stress on the implants and causing the failure of the implantation, such as their occupation, overweight, mental illness, alcoholism, or drug abuse.

## Introduction

The ReBorn Essence Trans-Pedicle Screw Fixation System consists of poly-axial screws, smooth rods, and locking nuts. Titanium compound is known for the best CT and MRI compatibility. The sizes are color-coated for reducing the chance of mistaken the sizes. With the requirement of the situation, a rotation handle can be used to rotate the rod for spinal correction.



## Design Rationale

The ReBorn Essence Trans-Pedicle Screw fixation system is designed with 30 degrees of angulation. This eases out the implantation of the rods in the short segment. When encountered with the sagittal balance correction like scoliosis, hyperkyphosis, and hyperlordosis, a rod rotating tools are available for angulation correction.

With this system, it also includes the side to side rod connector, head to head rod connector, side bar connector and extension rod connector. The complete set of the systems ensures users with better, more secure, and safer implantation in spine surgery.

## Unique Tools

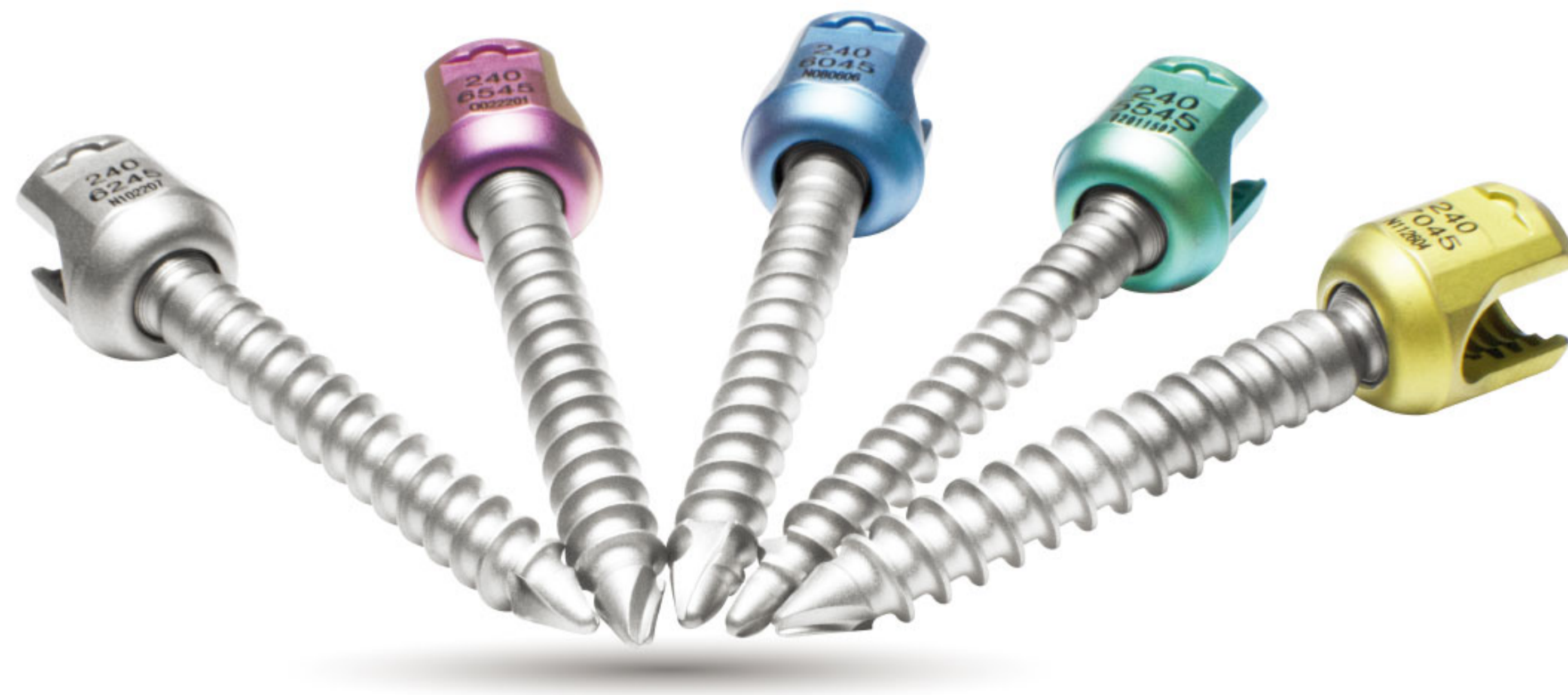
Specialized reduction tools are designed for the extreme reduction for poly-axial screws.

## Conclusion

ReBorn Essence Trans-Pedicle Screw Fixation System is the easiest and most complete set of the trans-pedicle screw fixation system.

With a variety of component and various combinations, the surgery becomes simple, secure, and sagacious.





## ReBorn Essence Lumbar Fixation System

### Pedicle Screw

	Length(mm)	Diameter(mm)
660-5035 ~ 660-7050	35 ~ 50	5.0 ~ 7.0



### Ploy Axial Screw

	Length(mm)	Diameter(mm)
240-4530 ~ 240-7560	30 ~ 60	4.5 ~ 7.5



### Cannulated Ploy Axial Screw

	Length(mm)	Diameter(mm)
280-5535 ~ 280-7560	35 ~ 60	5.5 ~ 7.5



	Length(mm)	Diameter(mm)
281-5535 ~ 281-7560	35 ~ 60	5.5 ~ 7.5



### Pedicle Long Screw

	Length(mm)	Diameter(mm)
661-4530 ~ 661-7560	30 ~ 60	4.5 ~ 7.5



	Length(mm)	Diameter(mm)
662-5535 ~ 662-7550	35 ~ 50	5.5 ~ 7.5

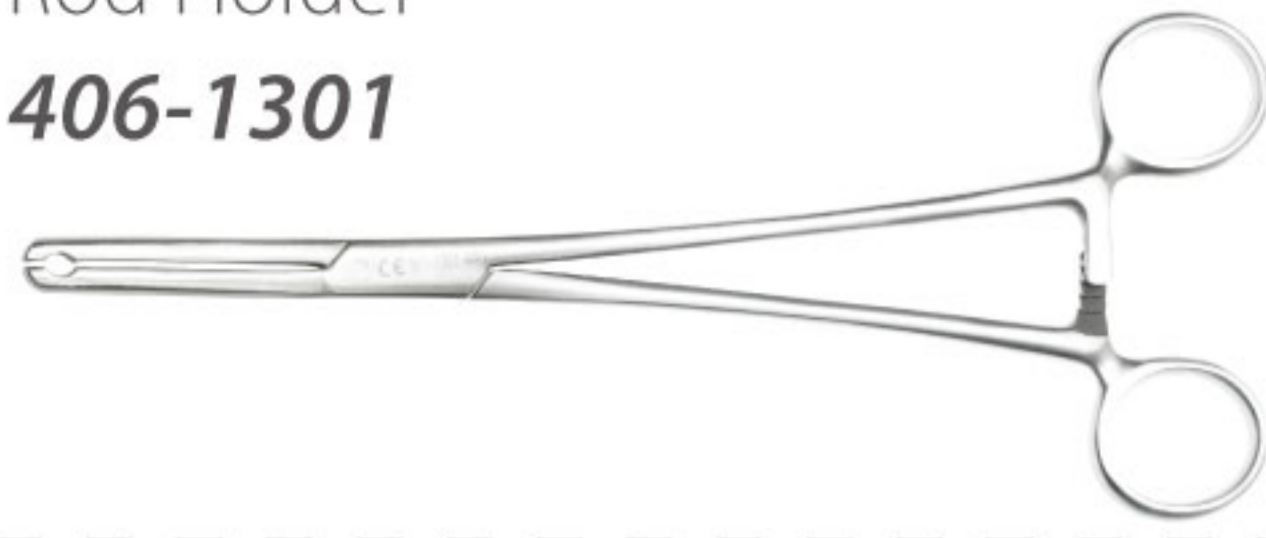


**Tools**

Sacrum Awl  
**180-0707**



Rod Holder  
**406-1301**



3mm Hex Screw Driver  
**406-0830**



Awl  
**406-0201**



Rod Bender  
**406-1201**



Poly Axial Screw Adjustable Driver  
**409-0813**



Probe  
**406-0301**



Rod Pusher  
**406-2601**



5mm Hex Screw Driver  
**409-0829**



Probe  
**406-0302**



Rod Pusher  
**406-2602**



8mm Hex Socket Screw Driver  
**406-0808**



5mm / 6mm Tap  
**406-0505 / 406-0506**



Mono Axial Screw Driver  
**409-0823**



5mm Rotator Bar  
**406-3005**



Cannulated 4.5mm / 5.5mm Tap  
**405-0545 / 405-0555**



Poly Axial Screw Driver  
**409-0824**



Anti-Rotator Pliers  
**409-3002**



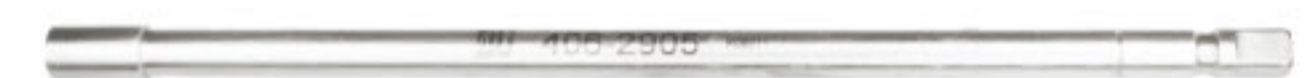
Sensor / Sensor (Curved)  
**406-0401 / 406-0402**



Cannulated Poly Axial Screw Driver  
**409-0832**



5mm Socket Wrench  
**406-2905**



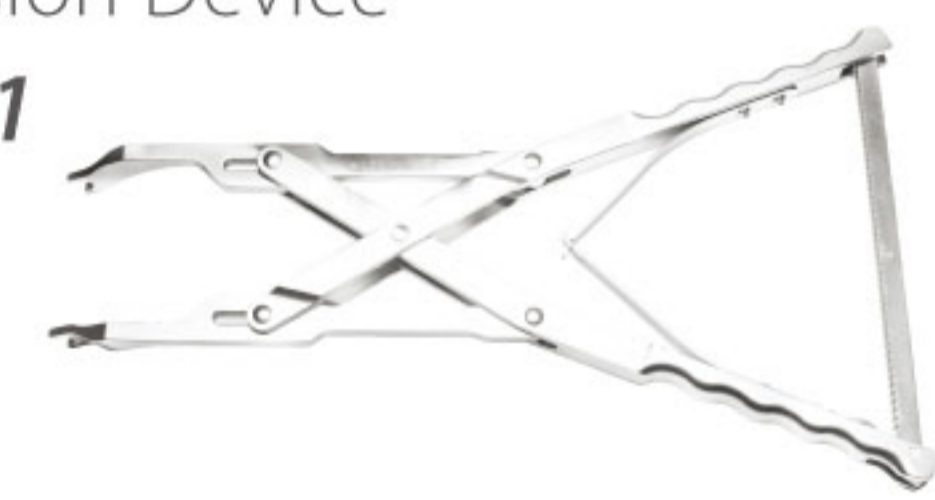
Guide Pin  
**406-3104 / 406-3114**



Anti-Rotator Wrench  
**409-3001**



Compression Device  
**409-0901**



T-Handle  
**406-0101**



Anti-Rotator Wrench  
**409-3003**



Distraction Device  
**409-1601**



### Transverse Link

	Length(mm)	Diameter(mm)
620-5501 ~ 620-5503	20 ~ 60	5.5



	Length(mm)	Diameter(mm)
610-2602	70	5.5



### Connecting Block

	Diameter(mm)
420 - 0213	5.5



### Axial Connecting Block

	Diameter(mm)
420 - 5555	5.5
420 - 3555	3.5 / 5.5



### Side Rod

	Length(mm)	Diameter(mm)
320-0520 ~ 320-0535	20 ~ 35	5.5



### Smooth Rod

	Length(mm)	Diameter(mm)
320-5504 ~ 320-5548	40 ~ 480	5.5



### Connection Rod

	Length(mm)	Diameter(mm)
350-5150	150	5.5



### Spinal Hook

	Length(mm)	Diameter(mm)
<b>560-2004</b>	4.6	5.5
<b>560-2006</b>	6.6	5.5
<b>560-2009</b>	9.6	5.5
<b>560-2012</b>	11.3	5.5
<b>560-2015</b>	15.2	5.5
<b>560-1109</b>	7.4	9.5
<b>560-1212</b>	8.6	9.5



### Lamina Hook

	Length(mm)	Diameter(mm)
<b>560-3004</b>	4.6	5.5
<b>560-3006</b>	6.6	5.5
<b>560-3009</b>	8.6	5.5
<b>560-3012</b>	11.3	5.5
<b>560-3015</b>	15.2	5.5



### Tools

Hook Driver  
**197-0604**



Laminar Hook Starter  
**197-0702**



Pedicle Hook Starter  
**197-0703**



# Anterior Cervical Interbody Fusion Cage



## Radio Translucent

PEEK material provides radio translucent for follow up with the post operation fusion status.

## Enormous Graft Window

Promotes the largest amount of fusion.

## Security Ready

0.5 mm teeth for primary stabilizing and prevention of backing out.



# Anterior Cervical Interbody Fusion Cage

## Device Description

- The ReBorn Essence Anterior Cervical Interbody Fusion Cage is designed for the treatments in cervical spinal diseases. This system is designed to maintain the disc height and promote the fusion of the cervical spine. Please refer to the use of indication stated in the manual of the ReBorn Essence Anterior Cervical Interbody Fusion Cage.
- The ReBorn Essence Anterior Cervical Interbody Fusion cage is not intended to be used with other systems of Anterior Cervical interbody Fusion cage.

## Indication

- The ReBorn Essence Anterior Cervical Fusion Cage is intended to be used in anterior cervical fusion. This system provides the stabilization of anterior spine from C2 to C7 during the development of cervical spinal fusions. This device can be used in the patient with one or multiple indications such as degenerative disc disease, trauma, spinal stenosis, cervical myelopathy deformities or curvatures, pseudoarthrosis, and failed previous fusion. The combination of anterior cervical platesystems is recommended for multiple levels.

## Contraindication

- In the condition which is absence or compromise of significant stabilizing elements. Patients with severe osteoporosis, infection, severe metabolic bone disease, or any entity or condition that totally precludes the possibility of fusion.
- In addition, some of the lifestyle of the patients will be affecting the stress on the implants and causing the failure of the implantation, such as their occupation, overweight, mental illness, alcoholism, or drug abuse.



## Design Rationale

The ReBorn Essence Anterior Cervical Fusion Cage is designed to restore lordosis curvature and maintain the disc height via anterior approach. The 0.5 mm teeth provide primary stability. And the backward teeth design can prevent the cage from backing out. Enormous graft window ensures the fusion area reaches the maximum as possible. Titanium placement pin ensures the cage is at the right place through in situ fluoroscopy.

## Conclusion

ReBorn Essence Anterior Cervical Fusion Cage is the easiest and most complete set in the market. With the largest bone graft window, users are secure with large fusion area. With the advanced design, surgery becomes simple, secure, and sagacious.

## ReBorn Essence PEEK Cervical Intervertebral Cage

### Cervical PEEK Cage

	Height(mm)	Length(mm)
844-05146 ~ 844-10146	5 ~ 10	14



### Tools

Cervical Implant Driver  
**218-0802**



Bone Chisel Kit (Tube)  
**218-3601**



Cervical Bone Graft Template  
**218-3203**



Bone Chisel Kit (Awl)  
**218-3602**



Cervical Final Implant Impactor  
**420-3301**



5mm~10mm Cervical Trial  
**218-0535 ~ 218-0540**



Bone Chisel Kit  
**218-3603**



Bone Graft Impactor  
**420-3302**





## ReBorn Essence Ana Cervical Interbody Fusion Cage

### Wave Cervical PEEK Cage

	Height(mm)	Length(mm)
W844 - 05146 ~ W844 - 10146	5 ~ 10	14



### Tools

Implant Driver  
**218-0809**



Implant Driver  
**218-0805**



# Posterior Lumbar Interbody Fusion Cage



## **Radio Translucent**

PEEK material provides radio translucent for follow up with the post operation fusion status.

## **Backward Teeth**

decrease the chances for cage pull-out.

## **Impact then Turn**

Turn 90 degrees after implantation give the users the maximized stability after implantation.

# Posterior Lumbar Interbody Fusion Cage

## Device Description

The ReBorn Essence Posterior Lumbar Interbody Fusion Cage is designed for the treatments in spinal diseases. This system is designed to maintain the disc height and promote the fusion of the lumbar spine. Please refer to the use of indication stated in the manual of the ReBorn Essence Posterior Lumbar Interbody Fusion Cage. The ReBorn Essence Posterior Lumbar Interbody Fusion Cage is not intended to be used with other systems of posterior lumbar interbody fusion cage.

## Indication

The ReBorn Essence Posterior Lumbar Interbody Fusion Cage is intended to treat lumbar spine instability including trauma, stenosis, dislocation, reduction, deformities and other diseases requiring lumbar interbody fusion. The combination of posterior stabilization is recommended.

## Contraindication

In the condition which is absence or compromise of significant stabilizing elements, patients with severe osteoporosis, infection, severe metabolic bone disease, or any entity or condition that totally precludes the possibility of fusion.

In addition, some of the lifestyle of the patients will be affecting the stress on the implants and causing the failure of the implantation, such as their occupation, overweight, mental illness, alcoholism, or drug abuse.

## Introduction

The ReBorn Essence Posterior Lumbar Interbody Fusion Cage consists of PEEK material implants. The PEEK material is known for the best biocompatibility for the interbody devices. With the high purity of the material and no carbon fibers, the chance of getting inflammatory is decreased.

With the same modulus as cortical bone, the chance of subsidence is decreased. With the material, the characteristic itself provides the fusion visibility under the x-ray.

It is the optimal device for the interbody fusion.

## Design Rationale

The ReBorn Essence Posterior Lumbar Interbody Fusion Cage is designed to restore lordosis curvature and maintain the disc height. The 1 mm teeth provide primary stability, and the backward teeth design can prevent the cage from backing-out.

The bullet shape gives users an easier impacting at starting point. 40% of the cage is made as a window to maximize the bone fusion area. The side window gives the bone fusion a better blood flow. Titanium placement pin ensures the cage is at the right place through fluoroscopy.

The impact and turn design make minimal invasive system possible in surgeries.

## ReBorn Essence PEEK Lumbar Intervertebral Cage



P-LIF PEEK Cage

	Height(mm)	Length(mm)
599-0824 ~ 599-1424	8 ~ 14	24

## Tools

PEEK Lumbar #8~#10 Implant Driver  
**420-1714**



PEEK Lumbar Implant Driver  
**420-1715**



5mm / 8mm Dura Retractor  
**420-3501 / 420-3502**



Bone Graft Impactor  
**420-3302**



Lumbar Final Implant Impactor  
**420-3303**



T-Handle  
**406-0101**



8mm - 14mm Distractor  
**420-1608 ~ 420-1614**



8mm - 14mm Trial  
**420-0608 ~ 420-0614**



8mm - 14mm Shaver  
**420-0708 ~ 420-0714**



# Transforaminal Lumbar Interbody Fusion Cage



## Radio Translucent

PEEK material provides radio-translucent for follow-up with the post operation fusion status.

## Wide Angulation Bullet shape

Fits the anatomical shape of the interbody area. Makes it easier for impaction with the bullet tip.

## Full Range Size

1 mm increment provides users with more specific choices of Cages.

# Transforaminal Lumbar Interbody Fusion Cage

## Device Description

The ReBorn Essence Transforaminal Lumbar Interbody Fusion Cage is designed for the treatments in spinal diseases. This system is designed to maintain the disc height and promote the fusion of the lumbar spine. Please refer to the use of indication stated in the manual of the ReBorn Essence Transforaminal Lumbar Interbody Fusion Cage.

The ReBorn Essence Transforaminal Lumbar Interbody Fusion Cage is not intended to be used with other systems of Transforaminal Lumbar Interbody Fusion cage.

## Indication

The ReBorn Essence Transforaminal Lumbar Interbody Fusion Cage is intended to treat lumbar spine instability including trauma, stenosis, foraminal stenosis, dislocation, reduction, deformities and other diseases requiring lumbar interbody fusion. The combination of the posterior stabilization is recommended.

## Contraindication

In the condition which is absence or compromise of significant stabilizing elements, patients with severe osteoporosis, infection, severe metabolic bone disease, or any entity or condition that totally precludes the possibility of fusion.

In addition, some of the lifestyle of the patients will be affecting the stress on the implants and causing the failure of the implantation, such as their occupation, overweight, mental illness, alcoholism, or drug abuse.

## Introduction

The ReBorn Essence Transforaminal Lumbar Interbody Fusion cage consists of the PEEK material implants. The PEEK material is known for the best biocompatibility for interbody devices. With the high purity of the material and no carbon fibers, the chance of getting inflammatory is decreased. With the same modulus as cortical bone, the chance of subsidence is decreased.

With the material, the characteristic itself provides the fusion visibility under the x-ray.

It is the optimal device for the interbody fusion.

## Design Rationale

The ReBorn Essence Transforaminal Lumbar Interbody Fusion Cage is designed to restore lordosis curvature and maintain the disc height via transforaminal approach. The 1 mm teeth provide the primary stability, and the backward teeth design can prevent the cage from backing out. The wide angulation bullet shape gives users an easier impacting at starting point. 50% of the cage is made as a window to maximize the bone fusion area.

The wide side window gives the bone fusion with a better blood flow. The titanium placement pin ensures the cage is at the right place through in-situ fluoroscopy. Millimeter increment gives users to have a precise choice when sizing.

## Conclusion

ReBorn Essence Transforaminal Lumbar Interbody Fusion Cage is the easiest and most complete set in the market. With full size range, users have the choice of choosing a more precise size to fit patients' anatomy. With the advanced design, surgery becomes simple, secure, and sagacious.

## ReBorn Essence PEEK Lumbar Intervertebral Cage

### T-LIF PEEK Cage

	Height(mm)	Length(mm)
599-0826 ~ 599-1426	8-14	26
599-0830 ~ 599-1330	8-13	30

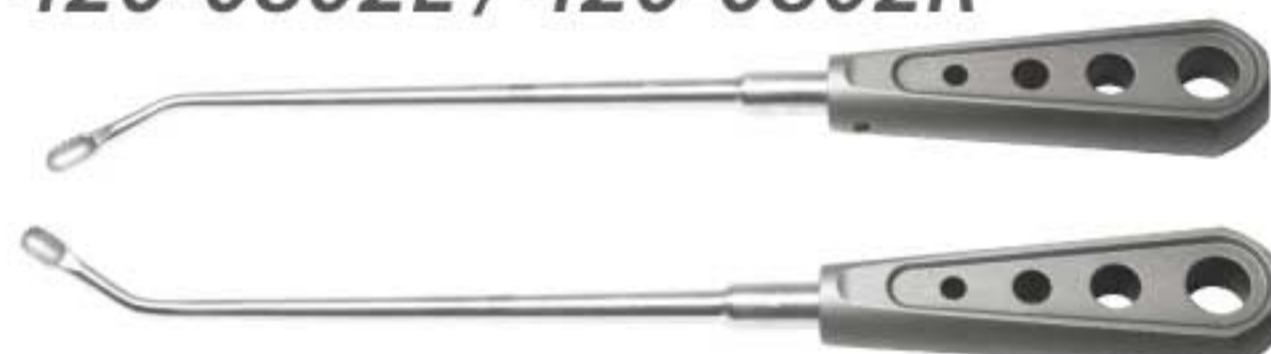


### Tools

Sliding Hammer  
420-0401



Shaver  
420-0802L / 420-0802R



Bone Graft Impactor  
420-3302



5mm / 8mm Dura Retractor  
420-3501 / 420-3502



PEEK Lumbar Implant Driver  
420-1715



Lumbar Final Implant Impactor  
420-3303



T-Handle  
406-0101



PEEK Lumbar Implant Driver  
420-1716



8mm-14mm Trial (31mm peek cage)  
420-0508 ~ 420-0514



7mm-13mm Shaver  
420-0807 ~ 420-0813



8mm-14mm Trial (27mm peek cage)  
420-0408 ~ 420-0414

