

Endovision Product Brochure - Spine 2021

# Endovision Spinal R&D Brochure SPINE

# Endovision Spinal R&D Product Brochure

UBE, BESS, PELD, PSLD, Pain Management

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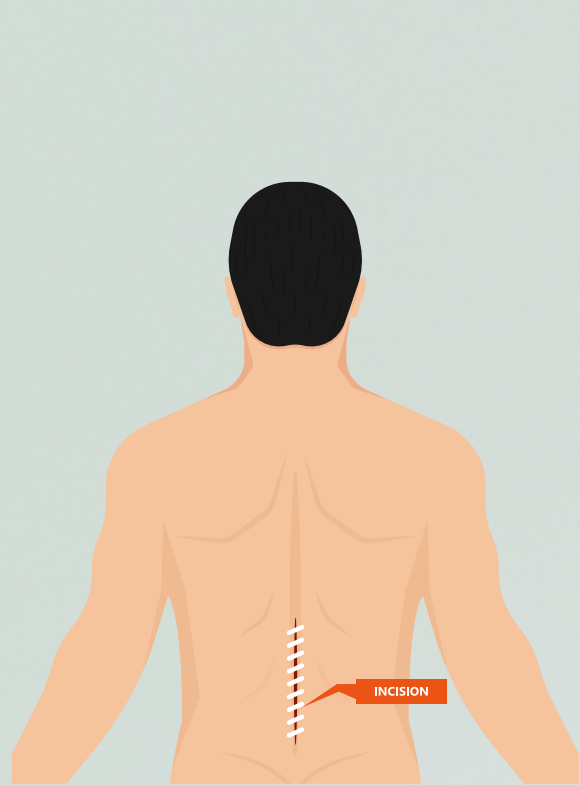
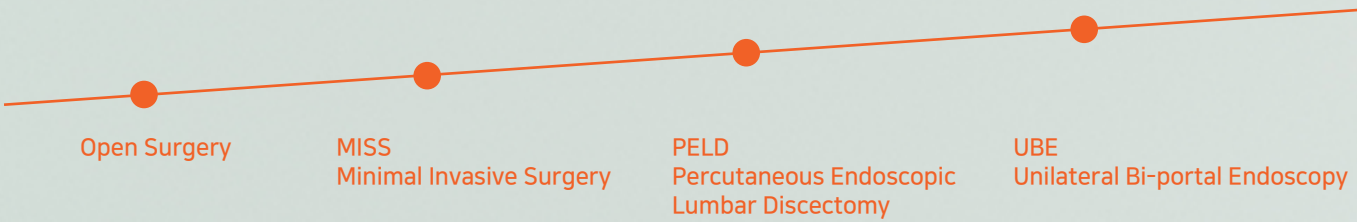
Innovation makes a difference!

Endovision, we along with our spine specialists, have spent a lot of time worrying about the pain and side effect and healing of our patients. “Since traditional incisions require longer recovery and rehabilitation periods, we have considered minimally invasive surgical methods and applied for a patent and were recognized for their value. We also research and develop specialized medical devices necessary for the medical market. We have prepared a training program to spread the surgery.

We hope our efforts could be delivered to the suffering patients as soon as possible.

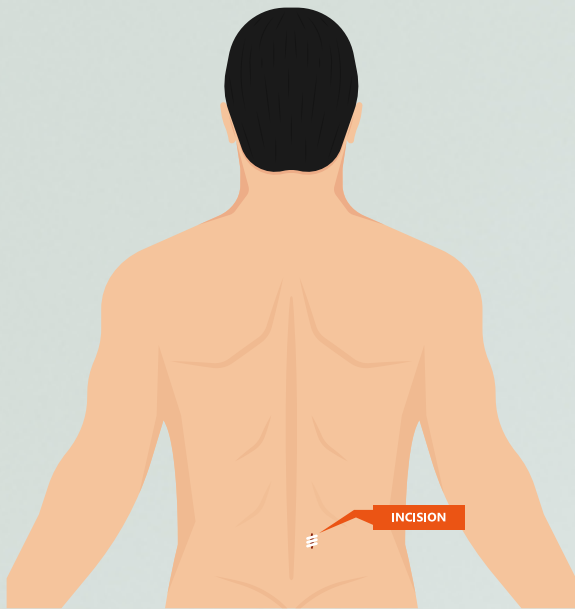


# Why Unilateral Bi-portal Spine Surgery?



## OPEN SURGERY

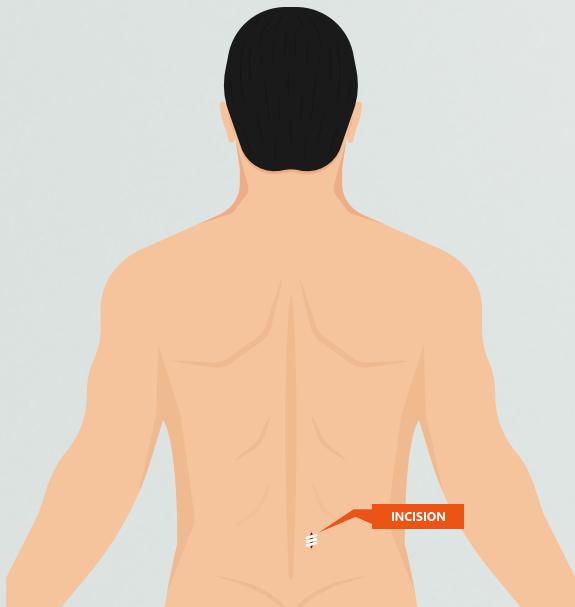
Conventional posterior open fusion surgeries can achieve wide decompression of neural structures and provide stabilization for surgically treated segments, they can also result in extensive destruction of posterior anatomical structures, thereby requiring long periods of recovery.



## MISS (MINIMAL INVASIVE SPINE SURGERY)

Minimally invasive surgical techniques have been developed to reduce the damage to surrounding tissues. Microscopic unilateral laminotomy has been used in degenerative lumbar stenosis, with good postoperative outcomes reported. However, disadvantages of a microscopic approach include the need for dissection of muscle and minor difficulties in contralateral visualization in patients who are obese or stocky. Additionally, as the microscopic approach restricts the surgeon's view to outside the spinal canal and limits the range of motion for surgical instruments, an extensive laminectomy and adjustment of the patient's position may be necessary to achieve the necessary decompression of the contralateral traversing nerve root during the procedure.

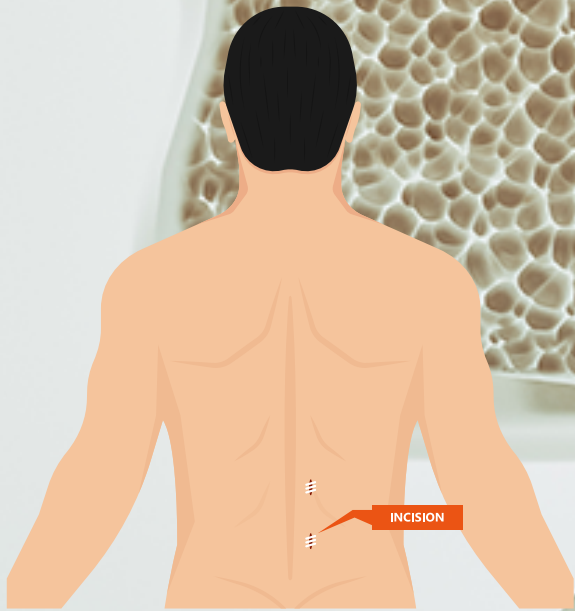
- Restriction of diverse surgical instruments
- One portal for Endoscopic tube & All instruments about surgery
- Uncomfortable operation view
- Unfamiliar one portal micro endoscopy for general orthopedic surgeon
- Usually used in Herniation of intervertebral disk, however It is difficult to apply to Lumbar spondylolisthesis case



## PELD (PERCUTANEOUS ENDOSCOPIC LUMBAR DISCECTOMY)

Percutaneous endoscopic lumbar discectomy is a technique for the decompression of the lumbar disc space and removal of nucleus pulposus via a posterolateral approach. The method is indicated in patients with non-sequestered lumbar disc herniation with an intact loral longitudinal ligament. Through a minimum incision about 5~7mm, a special endoscope is inserted into the protruding area of the disc. It is a treatment method that removes only the problem disc compressing nerve by using a laser and high frequency and saves the normal disc as much as possible.

- Since partial anesthesia is performed, it is suitable for the elderly and diabetic patients
- A treatment method that saves money and time because adhesions occur less and recovery is quick
- Clinical contra-indications include severe or rapidly progressing neurological deficits such as conus - or cauda - syndromes, or severe paresis



## UNILATERAL BIPORTAL ENDOSCOPY

### NO MORE OPEN

Unilateral Biportal Endoscopy is a surgical procedure to remove stenosis by inserting an endoscope by drilling two small holes about 4mm. It is a state-of-the-art surgical technique that inserts endoscopes on one side to find the exact cause, while inserting surgical instruments on the other to remove bone fractures in the ligaments and joints, which are the main causes of spinal stenosis.

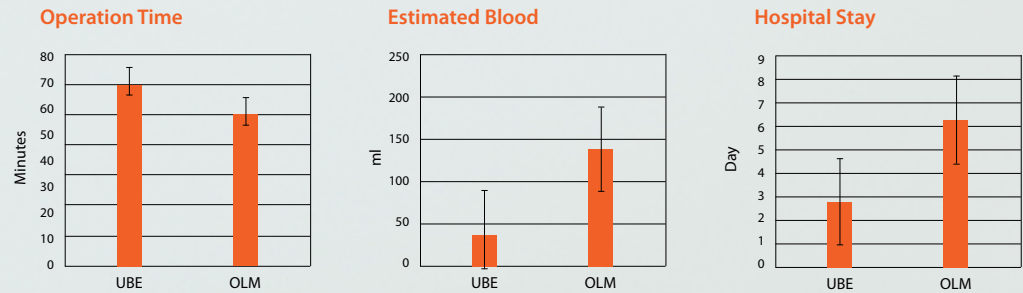
- Unilateral biportal approach, not uniportal
- Clean and wide view while using 2 ports
- No usage limitation of various surgical instrument
- Unilateral laminotomy for bilateral lumbar decompression
- A little bleeding
- Multi-level operation available
- Wide indication

### ADVANTAGES

UBE has several advantages: the similar sufficient and direct fragmentectomy and discectomy to that in open microdiscectomy resulted in the same clinical outcomes, including pain improvement, functional disability, and patient satisfaction, while preserving the spinal tissues.

- Herniation of intervertebral disk
- Cervical HIVD
- Degenerative spinal disorder
- Lumbar spondylolisthesis
- Senile Kyphosis

## UNILATERAL BI-PORTAL ENDOSCOPY VS OPEN LUMBAR MICRODISCECTOMY



Source: Research Paper Unilateral Bi-portal vs Open Lumbar Microdiscectomy

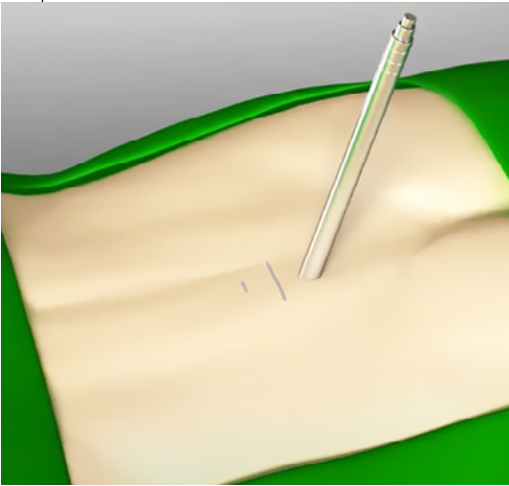


# Surgical Procedure of the Bi-portal Spinal Endoscopic Surgery

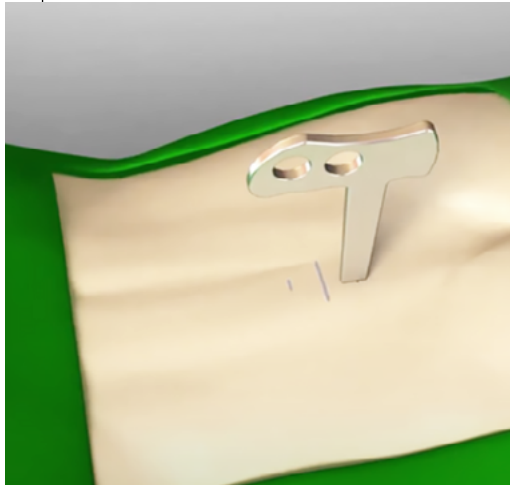
1~15: ENDOVISION UBE  
1~17: ENDOVISION FUSION

PREPARATION →

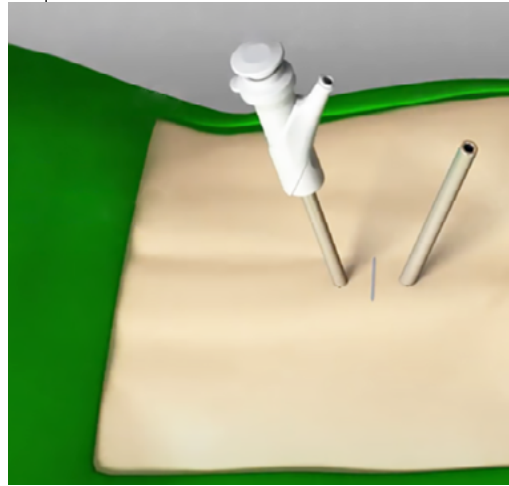
- 1. Skin Marking
- 2. Skin Incision (Working Port)
- 3. Dilation  
Products: EN-UBE Dilator



- 4. Muscle Detacher  
Products: EN-UBE Muscle Detacher
- 5. Core of Dilator (7mm)  
Products: EN-UBE Dilator 7mm

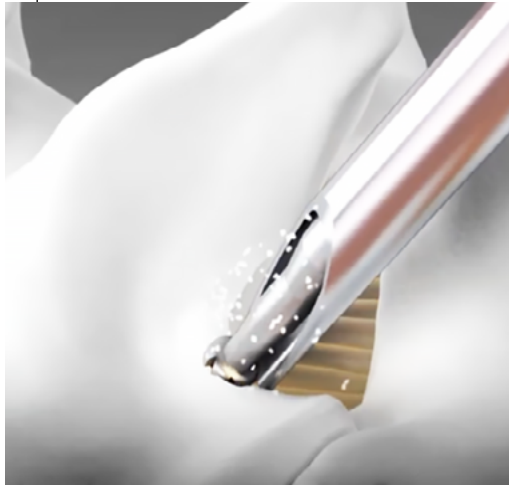


- 6. Skin Incision (Endoscope Port)
- 7. Endoscope & Sheath  
Products: Spinuss Scope Kit

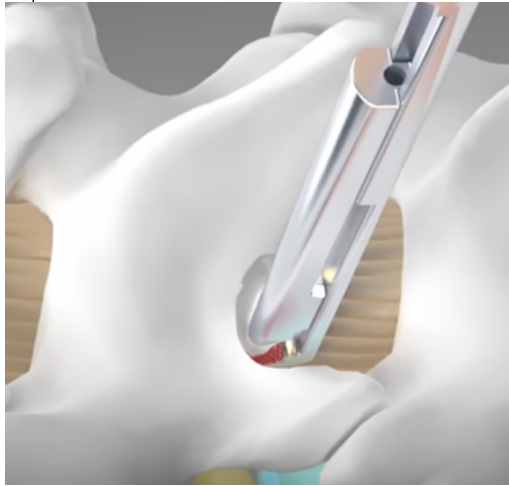


APPROACH →

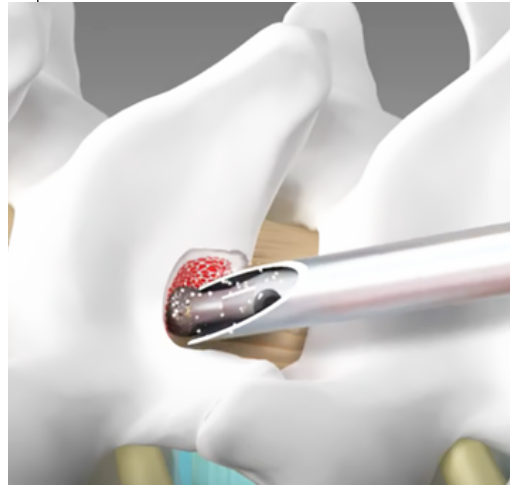
- 8. Bone Work  
Products: Spinuss Round Burr



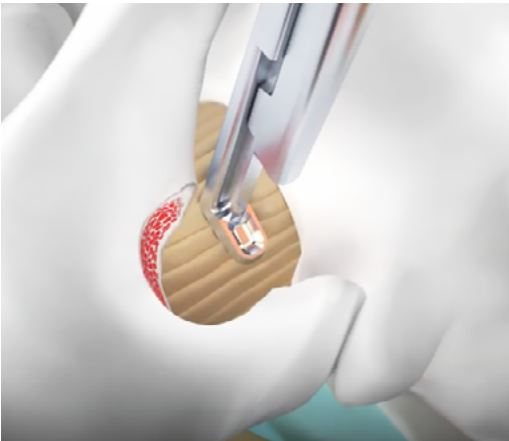
- 9. Grip, Cut, or Break Bones  
Products: Freetome Punch



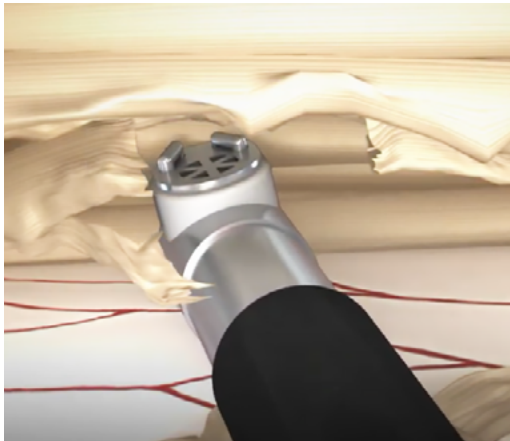
- 10. Exquisite Bone Work  
Products: Spinuss Diamond Burr



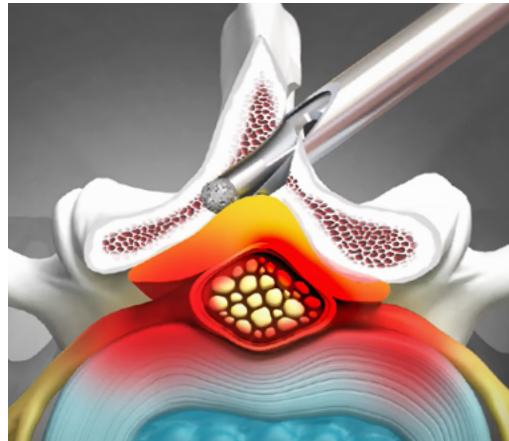
- 11. Open the Entrance by Cutting Ligament Flava  
Products: Tome Forcep



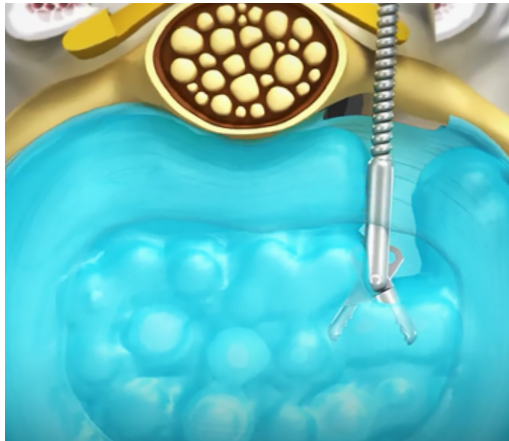
- 12. Ablating Ligament  
Products: Spinuss Pro Probe



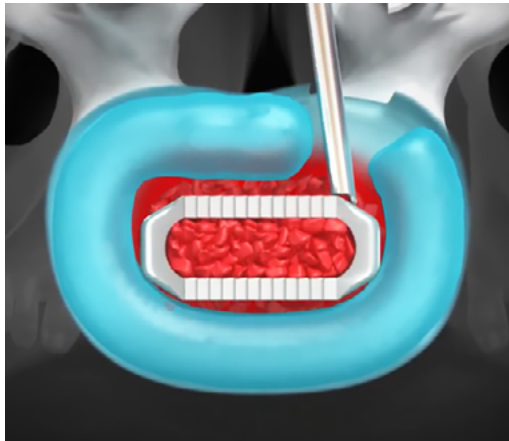
- 13. Open the Entrance by Cutting the Outer Surface of Disc  
Products: Spinuss Pro Probe, Tome Forcep, Spinuss Diamond Burr



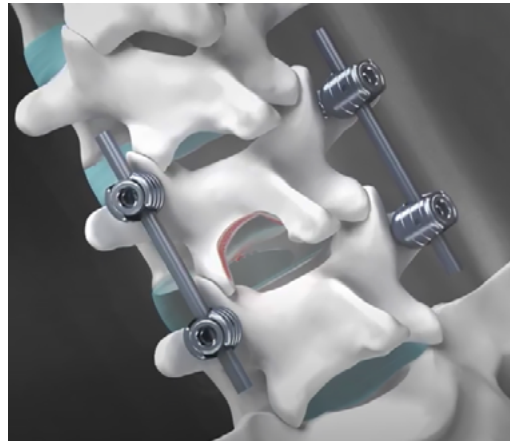
- 14. Grabbing Out the Disc Nucleus  
Products: Tome Forcep



- 15. Bone Grafting  
16. Cage Insertion  
Products: 3DXT Cage



- 17. Fixation with Screw  
Products: MIS Screw





# Bi-portal Total Solution System

The endovision UBE system provides a safer approach, greater precision and wider indications.

What is Bi-portal spinal endoscopic surgery?

- Based on ‘Translaminar lumbar epidural endoscopy
- Two portals endoscopic system one portal for scope, the other for instruments
- Procedure is same as open surgery
- The most minimally Invasive spine surgery for patients.

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- 30 FREETOME PUNCH-R



# Endovision Bi-portal Total Solution System

### FEATURES

- All-in-one Total Bi-portal Soutlion Sytem
- Clear and accurate image
- One push Auto white balance
- Modern and superior design

### POINT

- Fixation instruments during surgery
- Improvement convenience during surgery
- Minimize vibration (Almost zero)
- Integrated fixation ( All wheels )
- No vibration from external shock
- Easy to move



NEW



## FHD Endoscopic Camera System

### Camera Head

Image Sensor	1/3" CMOS, Progressive scanning
Sensor Pixels	1920 x 1080 Pixels
Camera Head Button	2 Programmable buttons
Lens Adaptor	Standrad C-Mount
Camera Cable	3m
Weight	280g
Dimension [ W x D x H ]	41.6 x 41.4 x 88.5mm

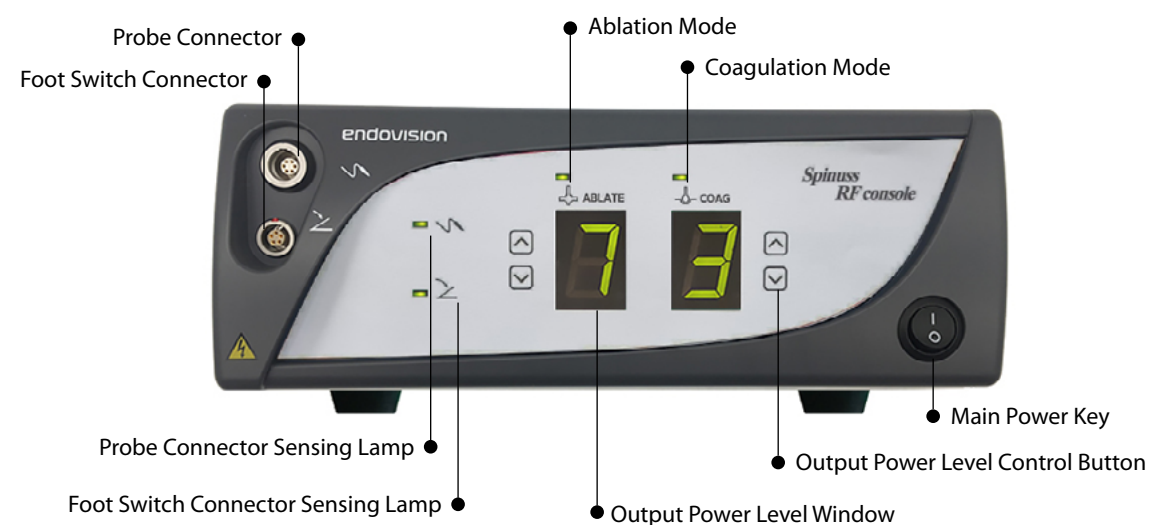
### Light Source

Lamp type	LED
Lamp life time	Over 50,000 hours
Color temperature	5,000K
Light outlets	Compatible with wolf type

### Main unit

Dimensions [ W x D x H ]	380 x 440 x 140mm
Weight	11.0kg
user interface	7" touch screen
Power supply	100-240 VAC, 50/60Hz
Safety	Medical safety standards : EN60601-1, Class I, Type BF Medical EMC standards : EN60601-2
Operating temperature	+10°C ~ +40°C
Power consumption	2.0A ~ 1.0A
Operating humidity	30% ~ 75%
Extend of delivery	Power cord Instruction for use

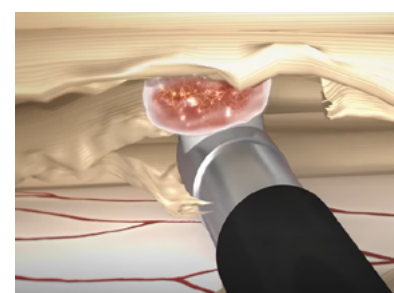




## SPINUSS RF Console

### UNILATERAL BI-PORTAL ENDOSCOPY INSTRUMENT SET

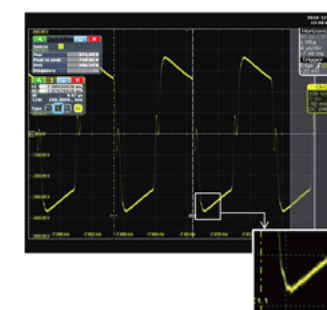
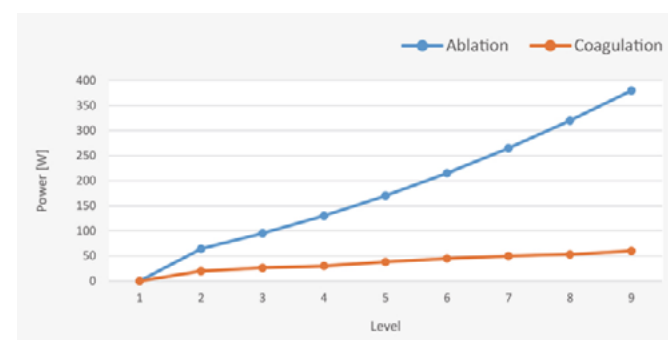
- Innovative ENDOVISION R&D
- Aiming excellent product quality (ISO13485, CE)
- Safe usability with precision mold processing
- Price competitiveness through own research and manufacturing process
- Endovision has OEM experience with global companies
- Most sold products in spine and orthopedic sports medicine area
- Compatibility to global medical system (smith & nephew)



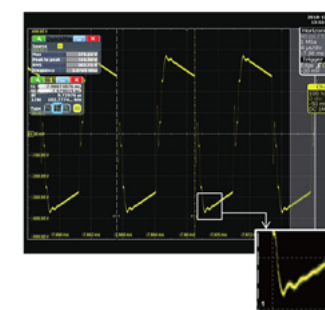
\*Plasma Effect on Tissue

### ABLATION & COAGULATION

Endovision RF Plasma is able to quickly and efficiently ablate, coagulate, and hemostasis the target tissue at a relatively low temperature of 40~70°C, unlike high-temperature operations. Sophisticated surgical work is possible depending on the target area.



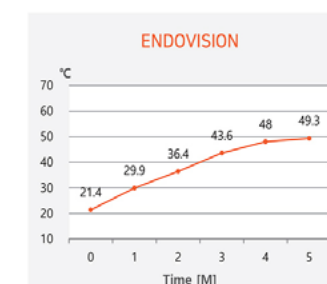
ENDOVISION: Stable Signal



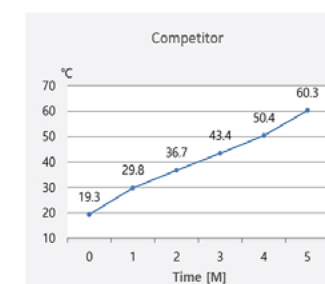
Competitor: Non-Stable Signal

### MEDICAL PLASMA OF ARTHROSS RF CONSOLE

Based on thermal stability, immediate plasma response without delay can be implemented to reduce damage to the target area. The newly designed RF console-PCB has excellent output control stability. Based on thermal stability, immediate plasma response without delay can be implemented to reduce damage to the target area, and precise use by users is possible. Currently 1-9 Level output can be controlled with a foot-switch.



Spinuss Temperature Increased 27.9°C



Competitor Temperature Increased 41.0°C

Spinuss RF console can be used more efficiently by improving plasma output response. Unlike existing products, it operates at a low temperature (40~70°C) and has excellent thermal stability, and can be used at a total of 9 levels depending on the target area.



#### POINT

##### Comprehensive Probe Series for Spine Endoscopy

- World first higher power level 1~9
- All fit in Spinal, Arthroscopy, ENT
- Free voltage for global version
- Compact design for user convenience
- CE & FDA approved



#### POINT

- Clear vision
- Optimal saline flow
- Smooth penetration
- Economical instrument for hospital
- Including 0°/30° endoscope

#### Disposable Endoscope & One-touch Assembling Catheter

## SPINUSS Pro Probe

#### INDICATION

Capsular / Ligament / Tendon Coagulation, Ligament Excision / FUSION / Disc

#### ENDOVISION PRO PROBE SERIES

IMAGE	TYPE	MODEL	DIAMETER	LENGTH
	Straight	APP200C	Ø4.3	135
		APP210C	Ø4.3	220
	Slope	APP201C	Ø4.3	135
	Curved	APP300C	Ø4.1	135
	Bevel	APP400C	Ø3.6	135
	Hook	APP500C	Ø3.2	135
	Ball	APP600C	Ø2.8	135

#### JUST CONNECT WITH EXISTING SYSTEM

IMAGE	TYPE	MODEL	DIAMETER	LENGTH
	Straight	APP200C	Ø4.3	135
		APP210C	Ø4.3	220
	Slope	APP201C	Ø4.3	135
	Curved	APP300C	Ø4.1	135
	Bevel	APP400C	Ø3.6	135
	Hook	APP500C	Ø3.2	135
	Ball	APP600C	Ø2.8	135

## UBE Scope Kit

#### ADVANTAGE IN ONE-TOUCH TYPE

- Connection method is easy to fasten and separate by one-touch method
- Easy to separate and fasten by onetouch structure with connection to the needle or UBE scope
- Light weight (Plastic Material) User fatigue is low when used for a long time



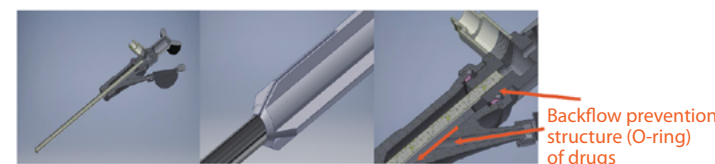
#### NON-INVASIVE INSERTION MECHANISM

- Design to prevent damage to the skin tissue Safe insertion through epidural space.
- Smooth penetration of muscle layer with pointed round surface



#### STABLE DRUG INJECTION FUNCTION

- Structure of open drug path
- Penetration of drugs is delivered to the SUS pipes and structure of the instrument

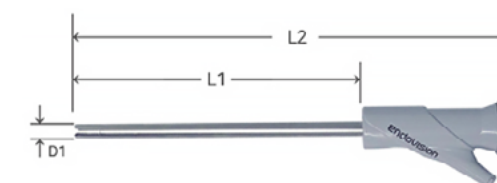


#### USE FILTERS TO PREVENT CONTAMINANTS FROM PANETRATING

- Prevent foreign substances and pollution from infiltrating through filters
- Inject drug in the direction of red marking



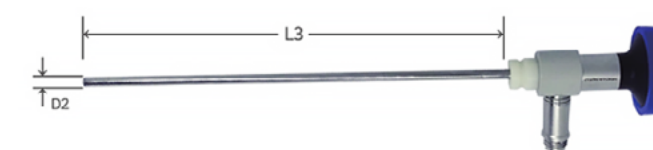
Drug injection direction



#### PRODUCT SIZE: UBE SHEATH

(UNIT: MM)

MODEL	D1	L1	L2
US100A	Ø6.0	117.5	183
US100A	Ø6.0	117.5	183

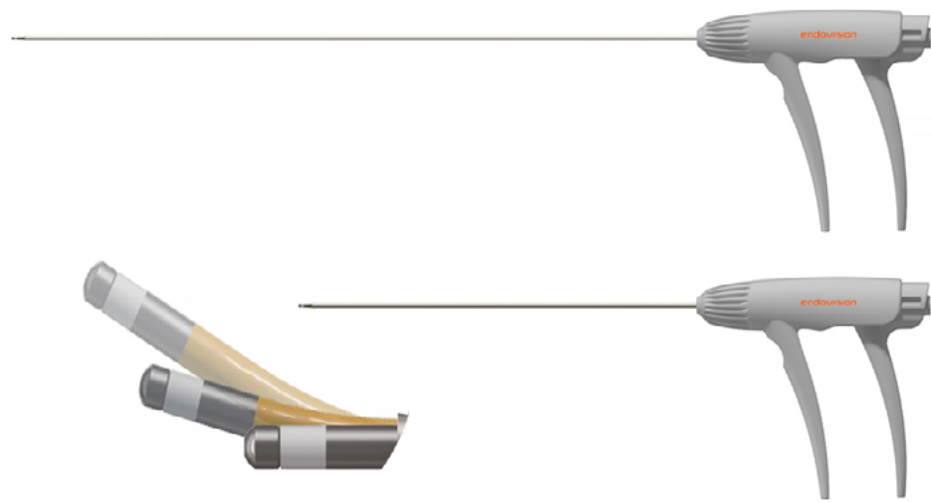


#### PRODUCT SIZE: UBE SCOPE

(UNIT: MM)

MODEL	D2	D3	ANGLE
US100A	Ø4.0	171.8	0°
US100A	Ø4.0	116.5	30°





# SPINUSS Flex Probe

## POINT

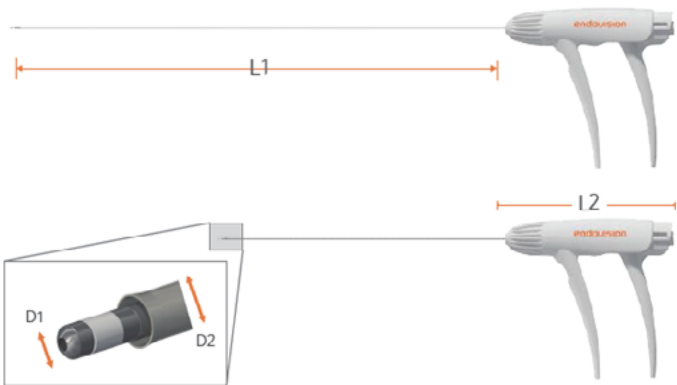
- Endoscopy Flex Probe
- Excellent hand grip
- Sophisticated control



Spinuss Flex Probe



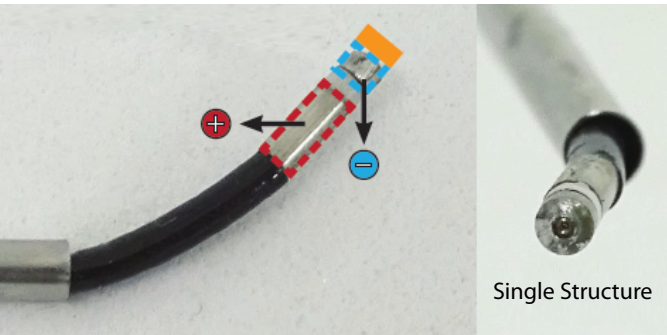
Other Companies



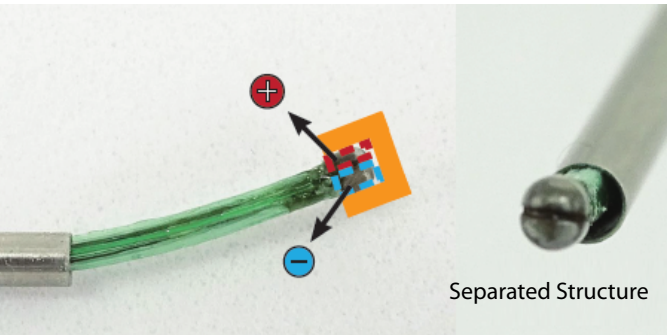
PRODUCT SIZE					
(UNIT: MM)					
MODEL	D1	D2	L1	L2	INDICATION
URT-10-08-35	Ø1.8	Ø2.5	370	108	PELD, PSLD
URT-10-08-50	Ø1.8	Ø2.5	250	108	Biportal

## ENHANCED PLASMA REALIZATION

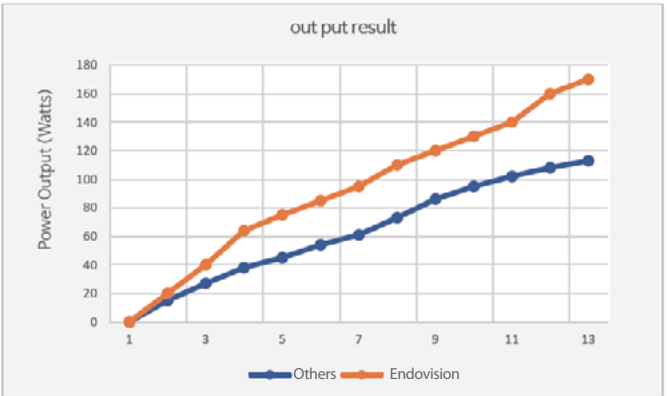
A stable plasma is realized by clearly separating the electrodes by making the tip of the tip in a unified structure



Spinuss Flex Probe



Other Companies





## SPINUSS Shaver System

### POINT

Next generation, high quality arthroscopic shaver system controlled via handpiece or via footswitch. Featuring extremely efficient and robust handpiece characterized by ergonomic and small construction. Designed to complete the procedure precisely at the minimal trauma level.

### FEATURES

- Wide range of rotational speeds
- Window calibration feature
- Available direction modes: forward, oscillation, reverse
- Nine oscillation modes
- Automatic handpiece detection
- Controlled directly via buttons on the handpiece or via footswitch
- Fully autoclavable, light and ergonomic handpiece
- Dedicated shaver blades

### SHAVER CONTROL UNIT

- Power supply: 100-240 VAC; 50/60 Hz
- Power consumption: 65 VA
- External dimension: D: 250 mm x W: 330 mm x H: 96 mm
- Weight: 4.8kg
- Ambient temperature: During operation: +10°C to +40°C  
During operation and transport: -20°C to +45°C
- Max. relative humidity: During operation: 70%  
During storage and transport: 70%
- Class of protection: Class I
- CE Standard: EN60601-1: 2006+A1: 2013; EN 60601-1-2: 2015;



### SHAVER HANDPIECE

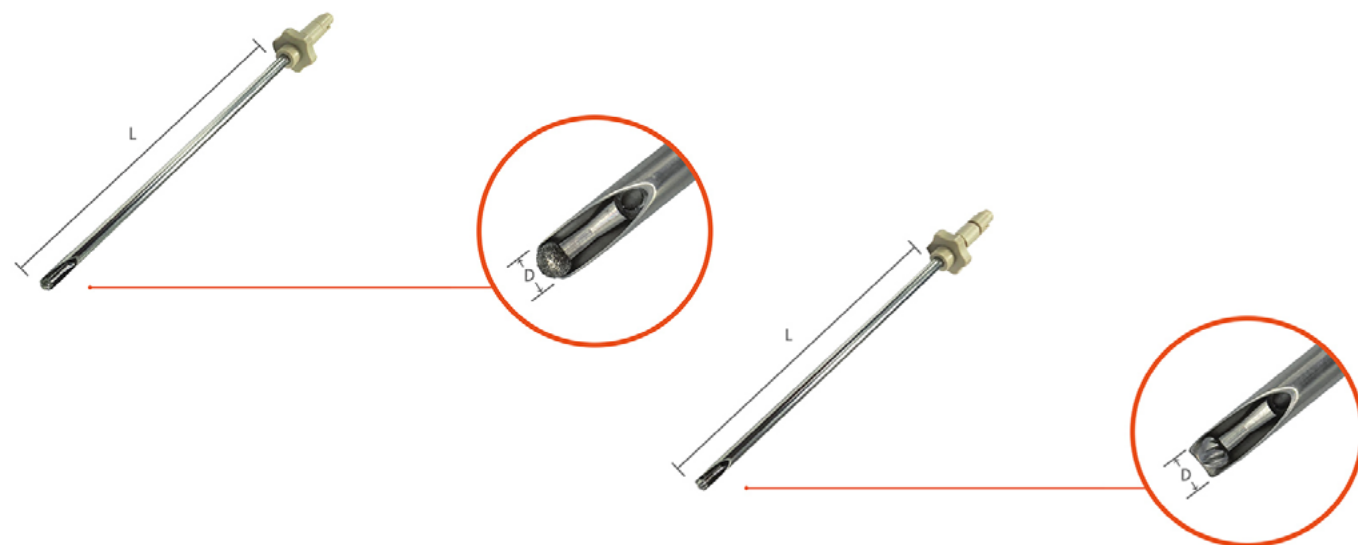
- Length: 164mm
- Weight: 325g
- Shaver blade chuck: Automatic / Barracuda type
- Speed range: FWD, REV: 500 -8000 RPM (+/- 10%)
- OSC: 500 - 3500 RPM (+/- 10%)
- Oscillation modes: 9 different modes
- Cable length: 3.2m
- Sterillization method: Steam sterillization 134° C
- Max. relative humidity: During operation: 100%  
/ During storage and transport: 90%
- Class of protection: Applied part - type BF



### SHAVER FOOTSWITCH

- Dimmension: D: 215 mm x W: 280 mm x H: 28 mm
- Weight: 2.1kg
- Cable length: 3.2m
- Casing safety standard: IP x 7
- Functions: Speed up, Speed down, START/STOP,  
Window Size, Diection
- Ambient temperature: During operation: +10°C to +40°C  
During operation and transport: -20°C to +45°C
- Max. relative humidity: During operation: 100%  
During storage and transport: 90%





## SPINUSS Diamond & Round Burr

### FEATURES

Spine endoscope surgical instruments

Compatible with: LV: Linvatec / AT: Artherex / ST: Stryker

Spinuss burrs can be connected to the Shaver system you have. Connectors are provided with environmental considerations, and burrs can be used immediately after connection. Shaver system not only makes it easy to operate but also provides the economic s of hospital equipment and organizational operations. In addition, the new Spinuss burrs made of sophisticated molds, works reliably without tissue damage, providing reliable handling to users.

### POINT

- LV/AT/ST Diamond: Use for fine-cutting with diamonds
- LV/AT/ST Round: Use for large area or deep cutting
- Safe and delicate operation
- Shield of the shaft will protect the nerve against the burr head while drilling



### ENDOVISION BURR SERIES

IMAGE	TYPE	MODEL	CONNECTOR
	Round Burr	URB-20-13-40	
	Diamond Burr	UDB-20-13-40	
	Oval Burr	UOB-20-13-40	

### JUST CONNECT WITH EXISTING SYSTEM

IMAGE	TYPE	MODEL	SPEC
	LV Round Burr AT Round Burr ST Round Burr	URB-20-13-40 URB-30-13-40 URB-40-13-40	L : 130mm D : Ø4.0
	LV Diamond Burr AT Diamond Burr ST Diamond Burr	UDB-20-13-40 UDB-30-13-40 UDB-40-13-40	L : 130mm D : Ø4.0
	LV Oval Burr AT Oval Burr ST Oval Burr	UOB-20-13-40 UOB-30-13-40 UOB-40-13-40	L : 130mm D : Ø4.0

\*LV: LINVATEC / AT: ATRHREX / ST: STRYKER





# SPINUSS Fluid Pump System

## PONIT

A medical water pump designed to deliver medical fluid under a given pressure to an operating area. The device dedicated to arthroscopic, hysteroscopic and urologic surgeries. Controlled by a control unit panel or a remote control. Used with disposable and day-use tubings.

## FEATURES

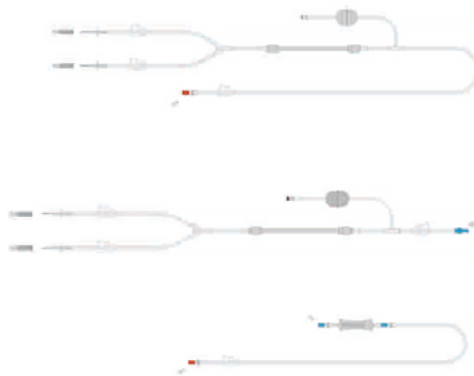
- Minimally invasive method of delivering medical fluid to an operating area
- Precise callibration of the measuring system through LEVEL function
- FLUSH function for an efficient rinsing of an operating area
- Non-volatile memory of recent settings
- Three working modes of the Universal Water Pump
- Acoustic and visual signals ensuring correct tubing installation
- Optional control by a remote control
- Big and clear display, an intuitive menu

\*Provides all the three working modes

MODEL	5201-20	5201-30	5201-40
Specialty	Arthroscopy	Urology	Hysteroscopy
Pressure	10-150 mmHg	10-150 mmHg	10-150 mmHg
Flow	0,1-2,0 l/min	0,1-1,0 l/min	0,1-0.5 l/min

## WATER PUMP

- Weight: 7.6 kg
- External dimensions: D: 306 mm x W: 330 mm x H: 120 mm
- Supply voltage: 100-240 VAC
- Power frequency: 50/60 Hz
- Class of protection: Applied part – type BF
- Casing safety standard: IP X1
- Ambient temperature: During operation: +10°C to +40°C  
During operation and transport: -20° C to +45°C
- Max. relative humidity: During operation: 70%  
During storage and transport: 70%
- CE Standard: EN60601-1; EN60601-1-2



## WATER PUMP TUBINGS

- SINGLE-USE TUBING SET (SUTS)  
Installed directly to the pump control unit to an endoscopy sheat. Use of single-use tubing sets enforces their change after each surgery.
- ECONIMIC-USE TUBINGS, CONSISTING OF:  
1) DAY-USE PUMP PART (DUPP)  
Installed directly to the pump control unit and s Single-Use Patient Part (SUPP)
- 2) SINGLE-USE PATIENT PART (SUPP)  
Installed directly to a Day-Use Pump Part (DUPP) and to an endoscopy sheath.



## WATER PUMP REMOTE CONTROL

It makes it possible to control the flow and pressure of medical fluid without staying close to the control unit panel.





Unilateral Bi-portal Endoscopy Instrument Set

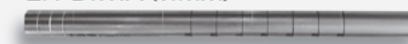
EN-DI115A (15mm)



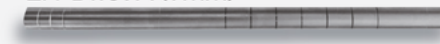
EN-DI113A (13mm)



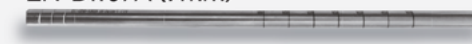
EN-DI111A (11mm)



EN-DI109A (9mm)



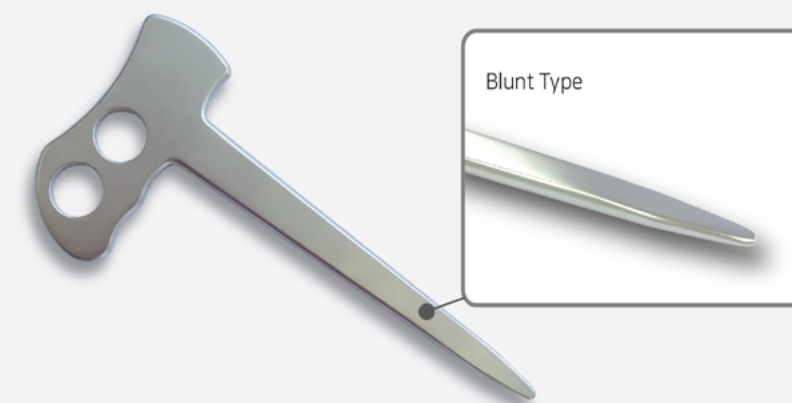
EN-DI107A (7mm)



EN-DI105A (5mm)



EN-MD100A



## SPINUSS Tool Kit Plus *Stenosis*

### UNILATERAL BI-PORTAL ENDOSCOPY INSTRUMENT SET

- A total 24 instruments
- A medical instrument set optimized for UBE Endoscopy
- CE, MFDS patented

### TOTAL 24 INSTRUMENTS

01. Dilator 1 (15mm)
02. Dilator 1 (13mm)
03. Dilator 1 (11mm)
04. Dilator 1 (9mm)
05. Dilator 1 (7mm)
06. Dilator 1 (5mm)
07. Muscle Detacher
08. Double Ended Retractor (3mm), 5° / 15°
09. Double Ended Retractor (3mm), 25° / 35°
10. Root Retractor (10mm)
11. Root Retractor (4mm)
12. Suction Tip (3mm)
13. Intradiscal Irrigator (3mm)
14. Chisel (straight, 5mm)
15. Chisel (pedicle, 4mm)
16. Chisel (hockey-left, 5mm)
17. Chisel (hockey-right, 5mm)
18. Curette (boomerang - 3mm)
19. Curette (reverse - 3mm)
20. Curette (3mm)
21. Curette (5mm)
22. Curette (6mm)
23. Mallet
24. Indian Knife

## 01~06. EN-UBE Dilator

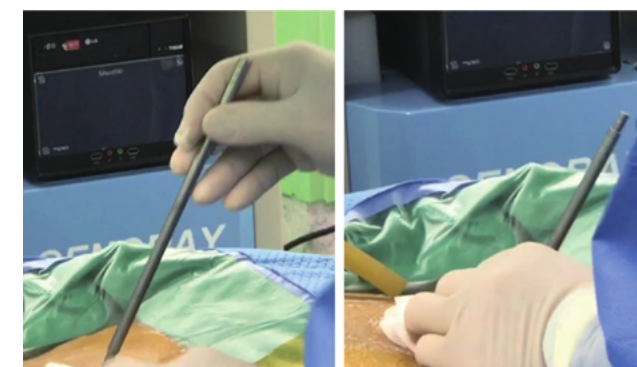
### INDICATION

Lumbar herniated disc  
Lumbar spinal stenosis  
Lumbar foraminal stenosis  
Lumbar interbody fusion with screw fixation, etc.

### HOW TO USE

- 1) Dilator extends the work space and keep it for the instruments, ultimately, It helps operator to keep the work space.
- 2) After Incision in surgery, It performs a role to extend work space to easily put cope & Sheath and UBE Instruments by extending the Incision site and keeping it.

*\*Make endoscopic and instrument pathway using dilators!*



## 07. EN-UBE Muscle Detacher

### POINT

Minimizing muscle injury during UBE surgery.  
The body of the EN-UBE Muscle detacher is made in a soft round shape without being angled to minimize the skin wound.

### HOW TO USE

- 1) It called T-bar, after the first Incision, the instrument is used to create work space by detaching muscle from bone for making a work space on the Laminar Bone.

*\*Solate the bonesand muscles by muscle detacher!*





Having various angels



## 08~09. EN-UBE Double Ended Retractor

### POINT:

#### Diverse degree and width for UBE procedure!

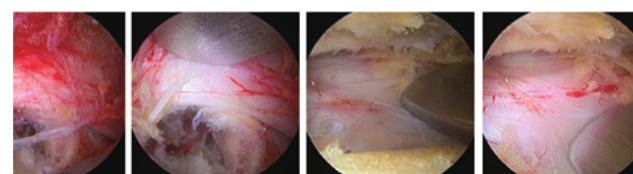
At UBE endoscopic surgery, EN-UBE double-ended retractor has been optimized to eliminate risk factors near the nerves by varying the angle of the tip.

A side angle	B side angle	15°	35°
5°		Width 3 mm	
25°			Width 3 mm

### HOW TO USE:

- 1) Detach Nerve Root from Bone.
- 2) Detach Nerve Root from Ligament flavum.
- 3) It has angle as 5 / 15 / 25 / 35 degree, The angle is used for apply Bone Wax to Bleeding point during Bone Bleeding.
- 4) Composed of width as 3 mm width , especially the 2mm is very effective for cervical.

The nerves are smoothly checked by using a double-ended retractor. Since the distal end of the retractor is blunt, the nerve and the nerve membrane, dura, can be safely protected.



## 10~11. EN-UBE Root Retractor

### INDICATION

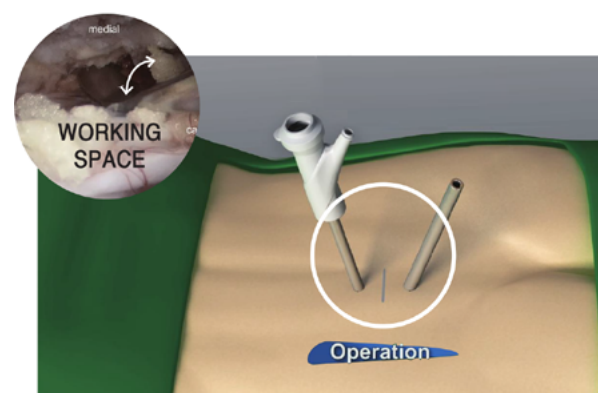
- Triangulation
- Working portal - Open
- Continuous Output
- Instrument Guider
- Soft tissue Retractor

**\*Hold the working space and instrument guiding!**

### HOW TO USE

- 1) It has a function as Semi Tubular retractor which helps to be inserted and taken out the instruments by keeping UBE biportal working portal safely.
- 2) It is served to control of Compression and decompression of Root as well as performing a role to secure the image by maintaining the space and water pressure of working space helping to open and close function of UBE biportal working portal.

**\*Hold a working space during UBE!**



## 12. EN-UBE Suction Tip 13. Intradiscal Irrigator

### POINT

Maintaining a constant pressure during UBE surgery. For UBE surgery, a constant pressure is required. In order to maintain a pressure (30~50mm Hg), one hole in the suction is necessary.

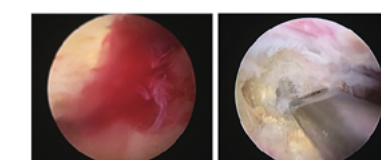
### HOW TO USE

Use as the suction is needed in surgery. After drilling, It can remove It can remove bone dust or small soft tissues which clouding the view. If the water pressure is high in the working space, using suction tip with the saline to lower the water pressure. After making a space to insert artificial disc (Cage) in the disc, It eliminate Material Dust from the body to use this instruments if it remains in the space.

- Hydrostatic pressure in OP field

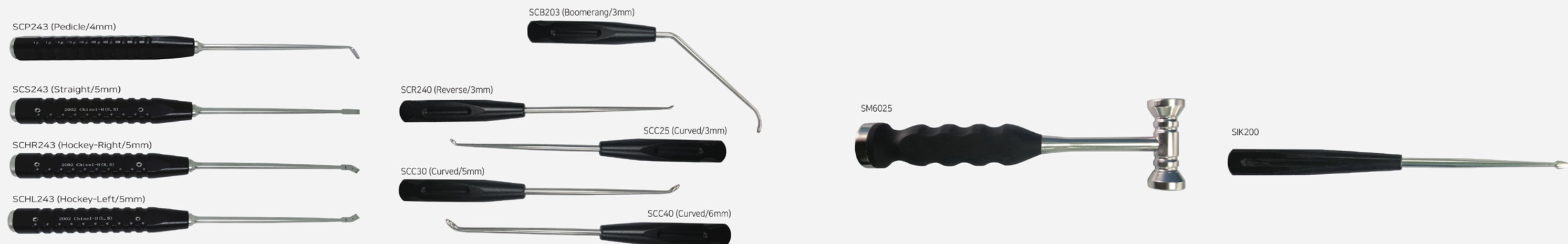
Sheath of scope  
UBE Retractor : Semi-tubular System  
: Acts as valve

30-50mmHg



- Bleeding control with suction tip
- DISC Removal with Intradiscal Irrigator





## 14~17. SPINUSS Chisel

### POINT

A surgical chisel for incising a bone, there are straight and curved types, and its uses are as follows!

- Cutting the lamina partially.
- Cutting the contralateral side of the IAP (Inferior Articular Process)
- Cutting the SAP(superior articular process)
- Cutting the pedicle

### HOW TO USE

- 1) After determining the tissue you want to remove, remove bones, etc. use a chisel at an appropriate angle.
- 2) Be careful not to damage surrounding tissues.



## 18~22. SPINUSS Curette

### POINT

Spinuss curette is a tool for endplate preparation!

- 2-3mm Curette
- 5mm Curette
- 6mm Curette
- Curette (Boomerang - 3mm)

### HOW TO USE

- 1) Gently scratch the endplate to expose the cancellous bone.

## 23. SPINUSS Mallet

### INDICATION

When force is required when inserting a cage or using other tools. It is a device that applies force while hitting the end of the tool.

(Not to apply excessive force, but to apply soft force.)

For reference, The main purpose of use is to insert a cage, but depending on the physician, it may be used to apply force to the tool even if it is not FUSION.

### HOW TO USE

- 1) In order to insert a CAGE, the instrument and the CAGE are combined and inserted, and then the end of the instrument is impacted to the end of the Mallet to deliver a soft force.
- 2) If it is difficult to control with the force of the medical staff when using other tools, impact the tip of the tool with the tip of the Mallet to deliver a soft force.

## 24. SPINUSS Indian Knife

### POINT

Annulotomy without root retraction.

### HOW TO USE

Incision the annulus of the disc, taking care not to damage the surrounding nerves and ligaments.



## FREETOME PUNCH-R

### POINT

Shaft + Handle  
Wide coverage of varied anatomy with diverse specifications!

Used to grip, cut, or break bones during endoscopic surgery

- User controllability maximization
- 8 different angles and lock function
- Augmented stability when assembled
- Ergonomic design

### PRODUCT SIZE: TYPE1 STRIGHT

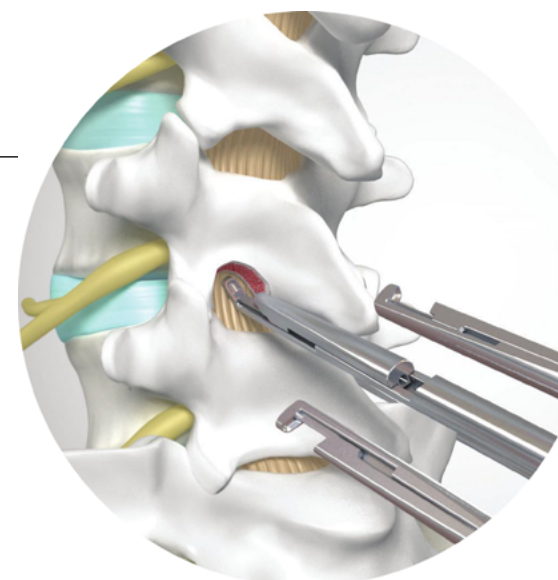


(UNIT: MM)			
MODEL	L1	L2	L3
FTR1802S	186.7	2.0	2.0
FTR1803S	187.2	3.0	3.0
FTR1804S	187.9	4.0	4.0
FTR1805S	188.7	5.0	5.0

### PRODUCT SIZE: TYPE2 CURVED



(UNIT: MM)			
MODEL	L1	L2	L3
FTR1802C	190.0	2.0	13.5
FTR1803C	190.0	3.0	15.0

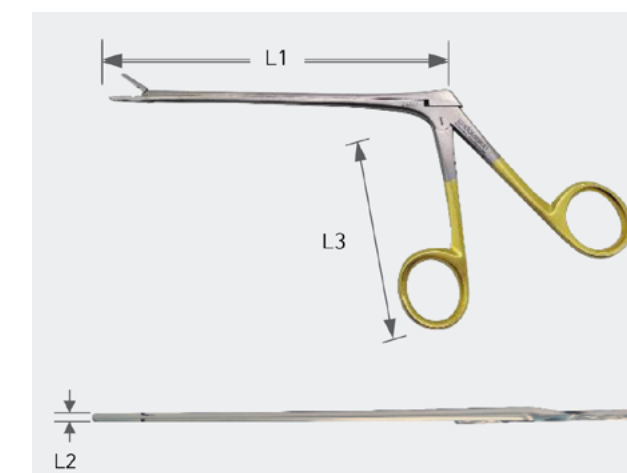


## TOME FORCEP

### INDICATION

- Is designed for tissue extraction and cartilage cutting
- Improved safety
- Easy and precise to use

### PRODUCT SIZE



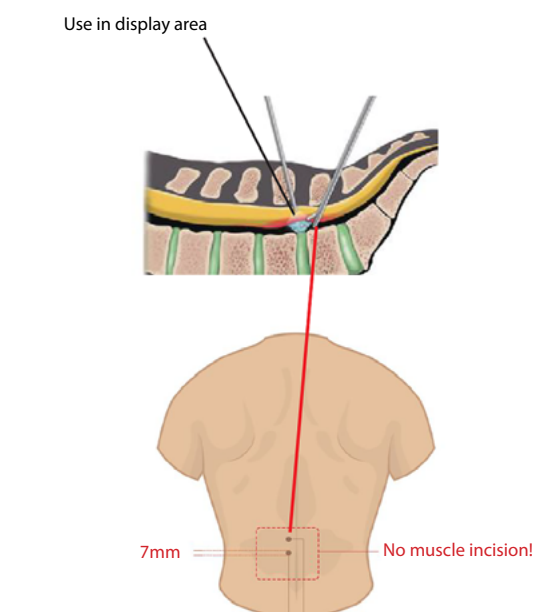
(UNIT: MM)				
MODEL	L1	L2	L3	INDICATION
TFS1501A	150 ± 0.5	2.0	80 ± 0.5	Stright
TFS1501A	150 ± 0.5	3.0	80 ± 0.5	
TFS1501A	150 ± 0.5	4.0	80 ± 0.5	
TFS1501A	150 ± 0.5	2.0 ± 0.3	80 ± 0.5	Up
TFS1501A	150 ± 0.5	2.0 ± 0.3	80 ± 0.5	

## Universal Retractor

### POINT

Retractor which is the optimized for spinal endoscopic surgery which allows surgery without the help of an assistant

- 2 Sets for Lumbar & Cervical
- Instruments guider specialized
- Free size up to 5mm to 15 mm
- Easy to detach and mount
- No interference during surgery
- Prevents the instrument from damaging the incision



### PRODUCT SIZE

(UNIT: MM)				
MODEL	R	D	H	INDICATION
URT-10-08-35	Ø8.0	39.1	35.0	Cervical
URT-10-08-50	Ø8.0	39.1	50.0	Lumbar



# Bi-portal FUSION Solution System

It is a surgery to connect and secure the joints of the weakened spine due to spinal trauma, degenerative changes, inflammation, tumors, etc. Unlike conventional fusion surgery, which requires an incision of more than 10 centimeters, a bidirectional spinal endoscopy is used. Remove bones, ligament tissue, and protruding discs with minimal incision.

Afterwards, use a spinal fusion fixture to secure the vertebrae so that they do not shake. The fixed area supports the maximum weight, which is effective in treating severe spinal stenosis or spondylosis/rear separation.

### FUSION Indication

- Patients with spondyl/rear potential with severe spinal instability
- Patients with spinal stenosis and disc due to degenerative changes
- In case of severe pain due to unstable spine itself
- Severe spinal deformations or severe damage
- In case of a recurrence of the lumbar disc

### FUSION Procedure

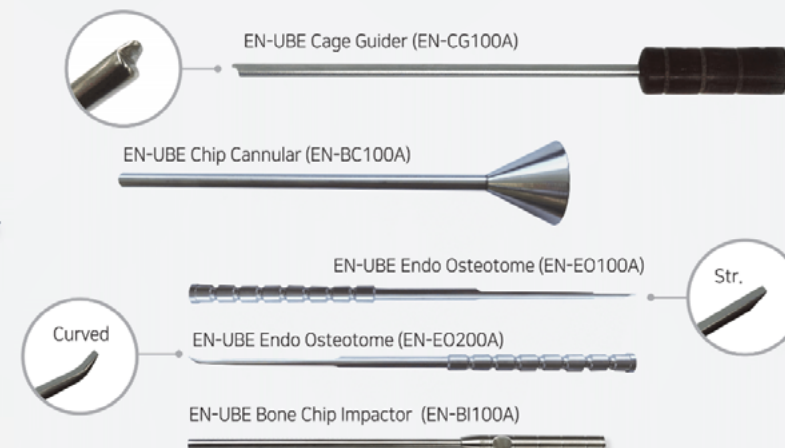
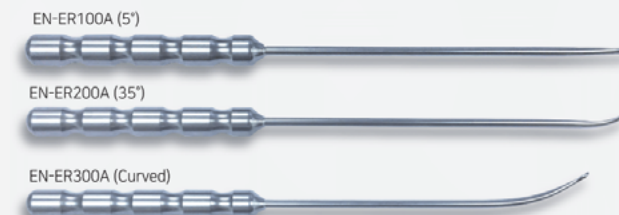
1. Disc removal: nerve-pressure disk removal  
(\*using UBE Surgery)
2. Cage: Insert between vertebrae and bone to maintain disc spacing  
(\*eXTLIF large cage to maintain gap)
3. Bone transplant: Insert bone cut into cage  
(\*eXTLIF porosity provides a well-growing bone environment)
4. Blood: Preparation of the vertebrae  
(\*using the UBE FUSION Toolkit)  
(exposure of the sponges to induce bone bleeding)
5. Fixation: Fixing vertebrae with screws

### contents

- 34 SPINUSS Tool Kit Plus (Fusion)
- 36 3DXT Cage & Instrument System
- 37 eXMIS Screw & Instrument System
- 38 eXTLIF Navigator & Software Program







Bi-portal FUSION Instrument Set

## SPINUSS Tool Kit Plus *FUSION*

### BI-PORTAL FUSION INSTRUMENT SET

- A total 9 instruments
- A medical instrument set optimized for FUSION Endoscopy
- CE, MFDS patented

### TOTAL 9 INSTRUMENTS

01. EN-UBE Shaver
02. EN-UBE Endplate-Remover (5°)
03. EN-UBE Endplate-Remover (35°)
04. EN-UBE Endplate-Remover (Curved)
05. EN-UBE Cage Guider
06. EN-UBE Chip Cannular
07. EN-UBE Endo Osteotome (straight)
08. EN-UBE Endo Osteotome (5°)
09. EN-UBE Bone Chip Impactor

## 01. EN-UBE Shaver

### INDICATION

It is used for making holes or entrances onto the target surgical region.

### HOW TO USE

It is also used for enlarging the already existed holes and making better proper size of the surgical working portal. It is manually functioning by turning the knob.

## 02~04. EN-UBE Endplate-Remover

### POINT

While performing endplate preparation, endplate-remover is used for removing the remnants and debris of disc and endplate particles

### HOW TO USE

Endplate-Remover has atraumatic but, still sharp-enough edge of the tips. So, it can be used to extract out the remnants and debris of disc and endplate of the bone. There are 3 different types of angle, so, you can choose different angles to make appropriate approach to the target region.

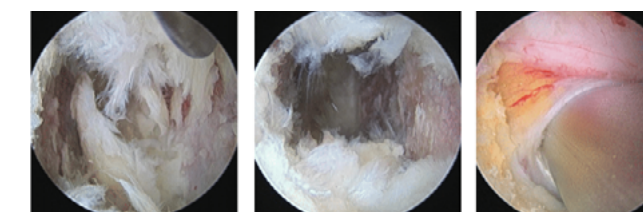
## 05~09. EN-UBE Cage Guider, Bone Chip Cannular, Endo Osteotome, Bone Chip Impactor

### POINT

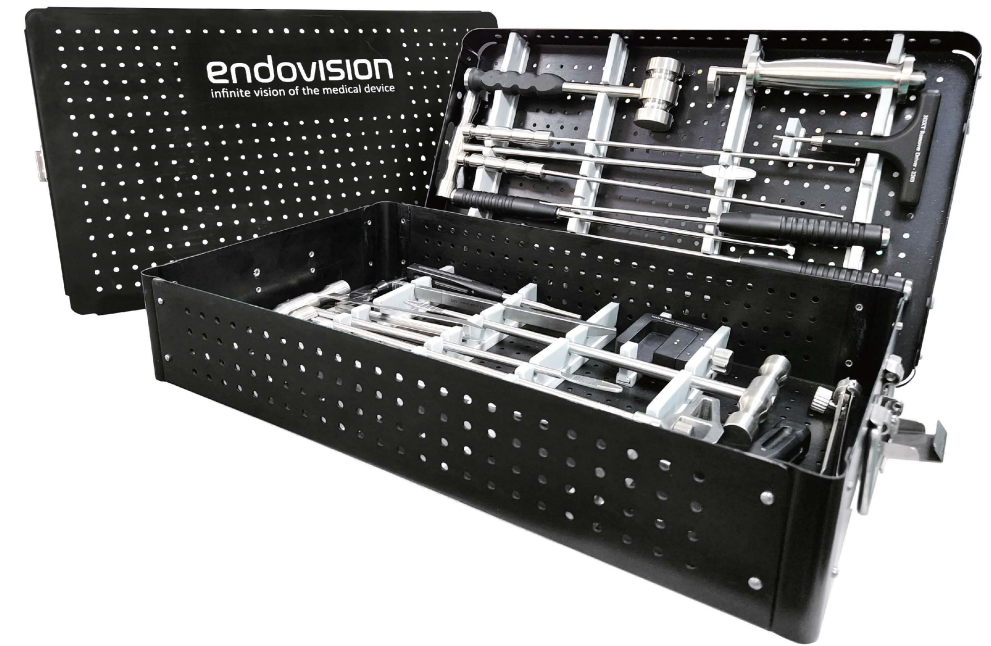
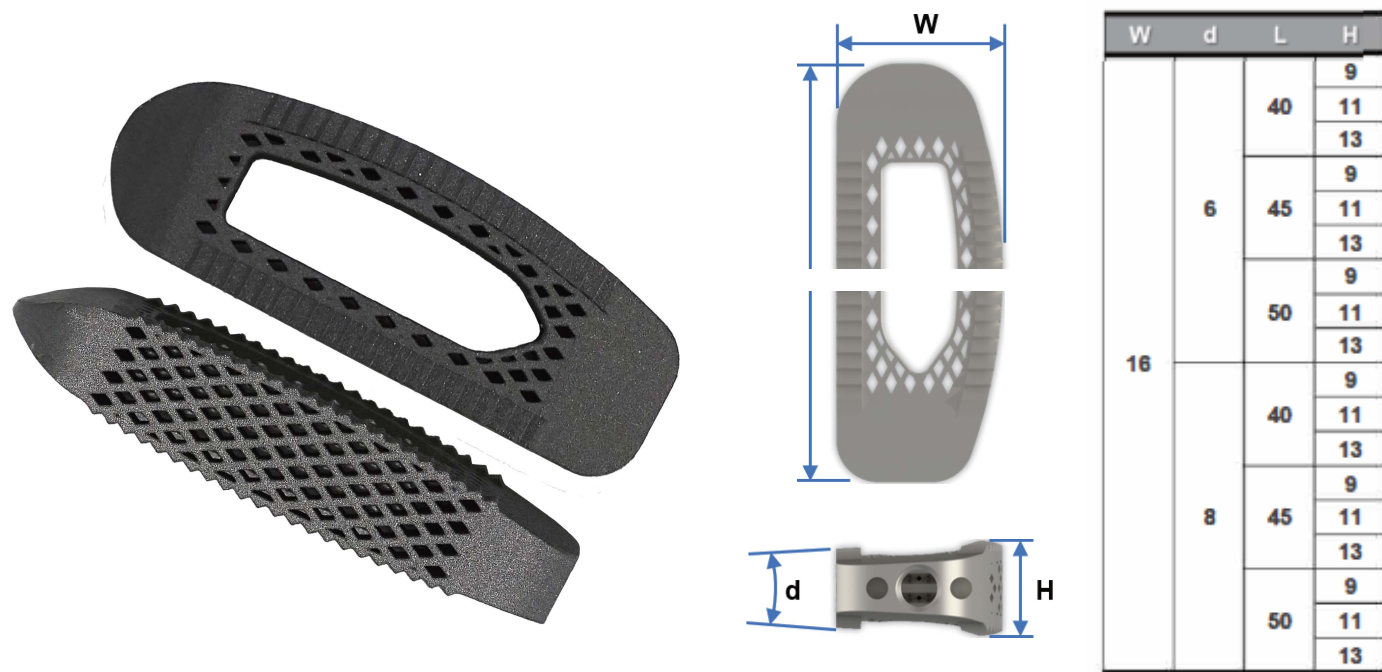
UBE specialized cage guider and EN-UBE Cage Guider & Bone Chip Cannular & Osteotome & Bone Chip Impactor obtain clean and wide Disc space for cage.

### HOW TO USE

- 1) Bone chip Impactor - It is impactor which is been designed to put artificial disc and Harvested Bone material into the disc safely and accurately in surgery Bone material into the disc safely and accurately.
- 2) Bone chip cannular - It is conduit which is used to put Harvest Bone chip into artificial disc space through Cannular.
- 3) Cage guider - It is used as put artificial disc to the disc space.



Move Disc plate clearly and insert a cage



## 3DXT Cage

### POINT

#### TITANIUM EXTLIP CAGE for Spinal Fusion Surgery

- The only largest cage that could be inserted **prone position (TLIF approach)**
- **Overcoming subsidence phenomenon** due to the large size
- Wide bone grafting space by materializing **Mesh/Porous** type
- Higher spinal fusion rate due to **plasma etching process**  
The plasma makes fusion more efficient and faster
- Good **Coronal & Sagittal** balanced

## 3DXT Cage Instrument



# Pain Management

Endovision developed Epidural Catheter System which can be used for percutaneous epidural neuroplasty. It delivers pain medication to the precise point of pain within spinal column. We also have All Fit Drain Patch for for securing catheters safely and easily.

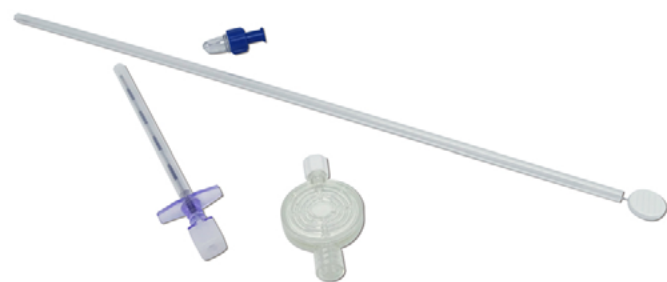
## contents

46 Flexcat-C & Flexcat R

47 All-fit Drain Patch



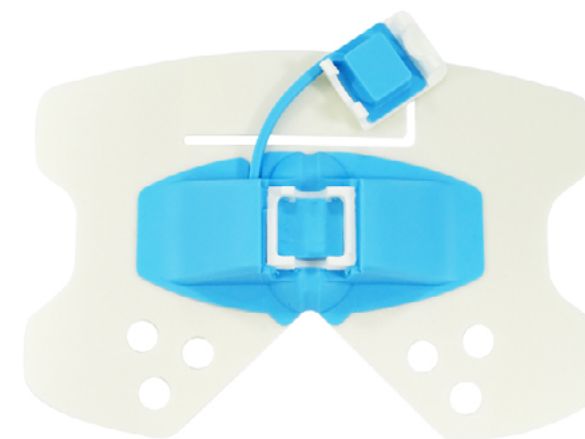




Flexcat-C



Flexcat-R



## Flexcat-C & Flexcat-R

### POINT

Epidural Catheter System Cervical & Lumbar Type

- Used for percutaneous epidural neuroplasty
- Non-invasive insertion
- Minimizes tissue damage
- Excellent rotation transmissibility
- Thin and flexible tube
- Precision steering
- Light and ergonomic design

COMPONENTS: FLEX-C CERVICAL



Catherter / Connector / Filter / Needle

COMPONENTS: FLEX-R LUMBAR

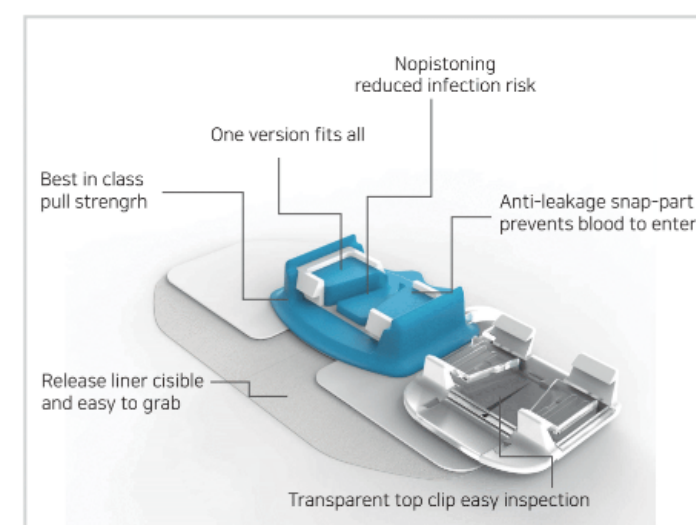


Ø 0.4mm x 2EA  
Ø 0.3mm x 1EA

Catherter / Stylet / Connector / Filter / Needle

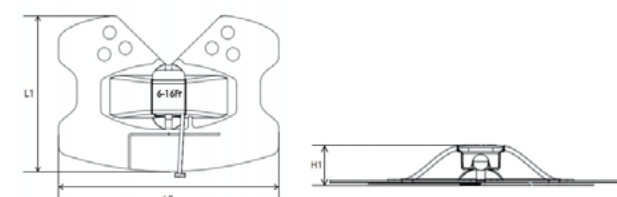
### SECURING CATHETERS SAFELY AND EASILY

- Safe to human body
- Best-in-class catheter fixation strength
- One size fits all
- Comfortable
- Without pain
- Easy to use



### POINT

- Best in class pull strength
- Release liner visible and easy to grab
- One version fits all
- No pistoning– reduced infection risk
- Anti-leakage snap-part prevents blood to enter
- Transparent top clip – easy inspection



### PRODUCT SIZE

(UNIT: MM)			
MODEL	L1	L2	H1
ADP-10-08-12	82.2	120	13.21

Contact us

# Contact Us

Spinal R&D

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