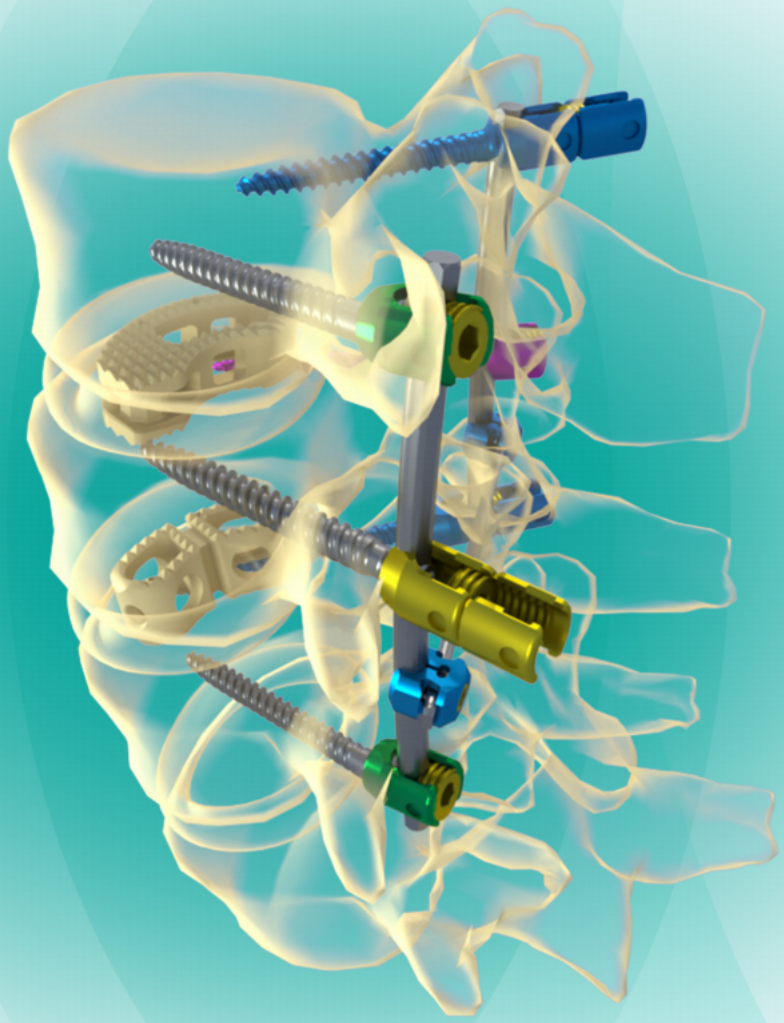
Posterior Lumbar Arc Fusion Cage

Operation Manual



Fule 富乐

Focus on orthopedics

Why choose Fule?

Our Advantages

- The company is a national high-tech enterprise integrating research and development, production and sales of medical devices, with full intelligent processing equipment production line.
- Academician expert studio was established to help Fule improve its R&D capabilities and further deepen production-study-research cooperation; Approved postdoctoral research station.
- With complete hardware facilities, excellent research and development team, and close cooperation with clinical experts, we have obtained more than 100 domestic and foreign patents.
- Based on the agent cooperation model, the company has established a nationwide sales and service network, and its products are supplied to nearly 1,000 third-class A hospitals throughout the country and exported to more than 20 overseas countries.

Beijing Fule Science & Technology Development Co,Lld

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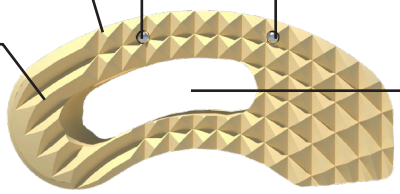
Add::No.50, Mafang WestIndustry Zone, Pinggu District, Beijing

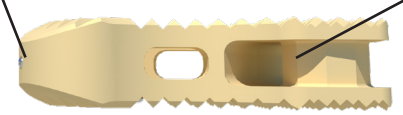
Content

Product Advantage

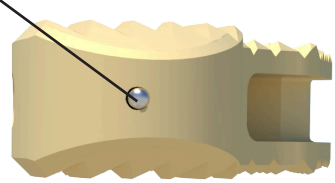
- Pyramid tooth shape to prevent slippage in all directions
- The first two developing needles allow for a see-through view of the implant position and are approximately 2.0 mm from the tip of the implant
- The surface texture guides it to the desired position and is directive
- The large bone graft hole in the middle is more conducive to bone graft healing



- Bullet design, easy to implant
- Bone grafting hole on the side, used with a holder and an orthopedic wrench



- The tip developing needle shows the position of the implant tip.
- It has good biocompatibility



Instructions for use

【Indications】

Degenerative disc disease and spinal instability
Revision surgery for post-discectomy syndrome
Failure of pseudoarthrothrogenesis or fusion
Degenerative spondylolisthesis
Isthmus fissure spondylolisthesis

【Contraindications】

Vertebral fractures
Spinal tumors
Severe spinal
instability
Primary spinal
deformity
Osteoporosis

Surgical Procedure

【Step 1】 Patient position

- In the prone position, place the patient in a physiologically lordic position, taking care to reduce abdominal pressure to minimize venous bruising (figure 1a).

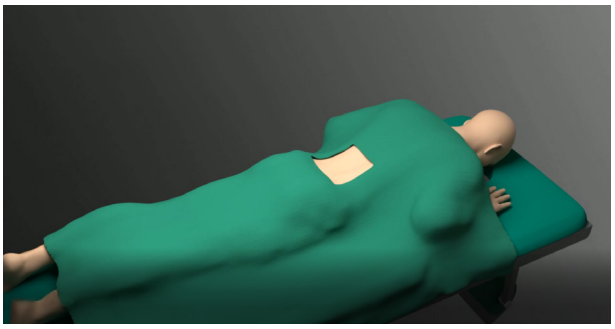


Figure 1a

Preoperative planning: the midline of the spine is judged under the image, the positioning is carried out, and the needle is developed in the side view image, close to the upper endplate of the bone joint, the depth reaches 2/3 of the endplate, and the depth of percutaneous puncture is determined.

Surgical Procedure

【Step 2】 Open transforaminal approach

- Draw a line marker and find the nerve probe needle in place (Figure 2a).

Figure 2a

- Remove the nerve probe needle, place the transfer cannula in place, insert the end of the wire sleeve into the valve disc, remove the cannula, and in the side view, push the dilator into the marked line position, halfway through the intervertebral disc space (Figure 2b).

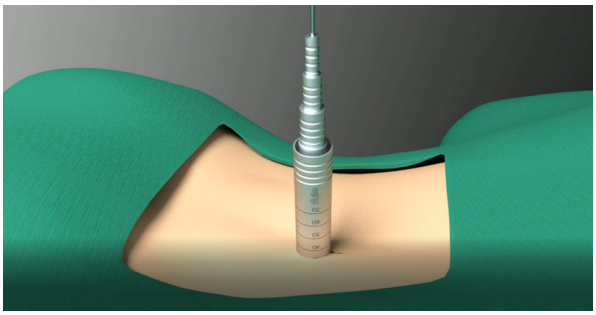


Figure 2b

- With the positioning needle as the center, the cortex is cut 1.5 cm with a total length of 3 cm, and the muscles are dilated using a stepwise cannula, a minimally invasive retractor is inserted, a light source is installed, and a free arm is connected (Figure 2c).

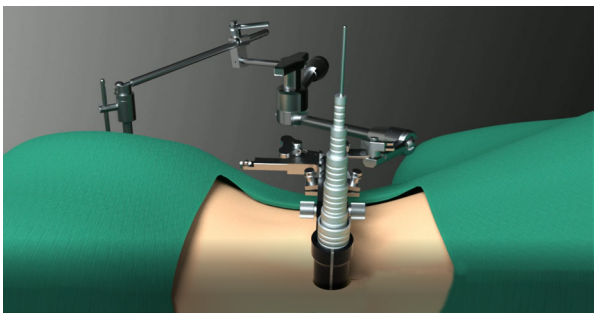


Figure 2c

Surgical Procedure

【Step 3】 Excision of the upper and lower articular processes

- The nucleus pulposus forceps the ligaments and the soft tissue above the articular process, revealing the upper and lower articular processes of the pyramid (Figure 3a).

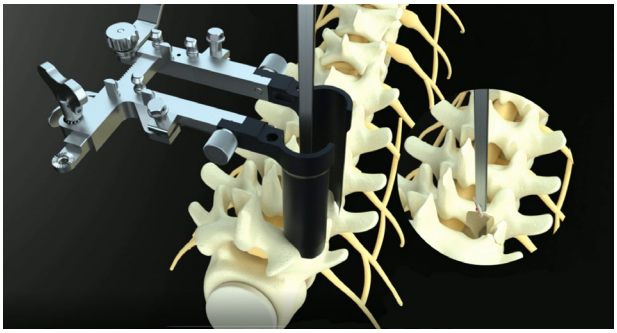


Figure 3a

- By treating the upper and lower articular processes, establishing a window, performing the surgical procedure at the upper endplate of the inferior cone and the pores of the nerve roots, the osteophytes and osteophytes are removed with rongeurs.

Surgical Procedure

【Step 4】 Intervertebral space management

- The fibrous annulus is incised, the disc is treated on the basis of preserving the fibrous annulus, and the disc and cartilage tissue are scraped off with a reamer. Use a left/right curette and an bent nucleus pulposus forceps when processing tissue at the outer edge of the intervertebral space (Figure 4a).

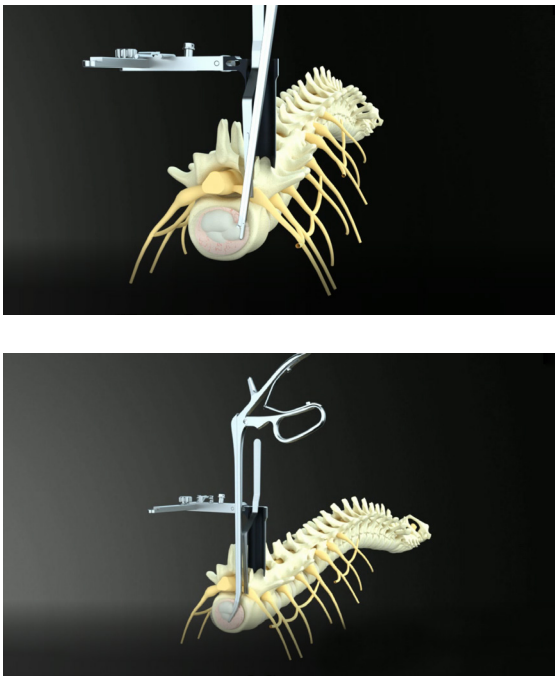


Figure 4a

Surgical Procedure

【Step 5】 Endplate treatment and intervertebral bone grafting

- After the discectomy is completed, a bone file (straight/bent) is used to remove the cartilage layer on the surface of the endplate until oozing blood appears on the bone surface (Figure 5a).

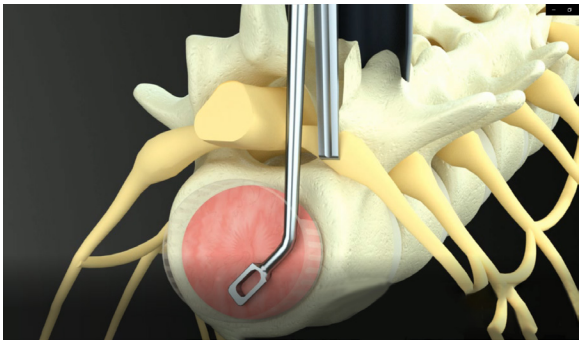


Figure 5a

- Prior to the implantation of the fuser, tamponade the grafted bone anteriorly and laterally in the vertebral space (Figure 5b).

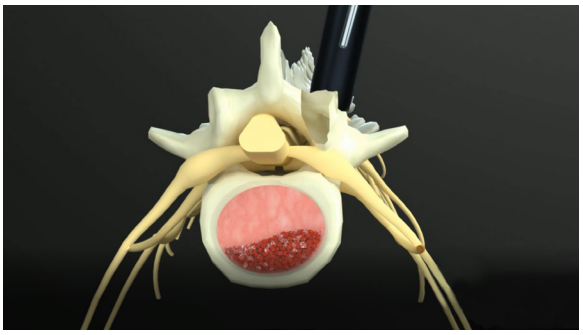


Figure 5b

Surgical Procedure

【Step 6】 Insert the Trail

- The trail determines the size of the cage, and the trail is pushed into the vertebral space with the Slide hammer, and in the process of penetration, the perspective observation is whether the size of the trail position is appropriate, if it is not suitable, the trail is replaced step by step to achieve the most adaptation effect.
  The trail is inserted into the vertebral space, the orientation is confirmed, the head is pointed to the midline, and the position and size are appropriately observed by fluoroscopy, with the head of the tryout close to the anterior edge of the cone (Figure 6a).

Trail installation

- After confirming the size of the trail, take out the trail.

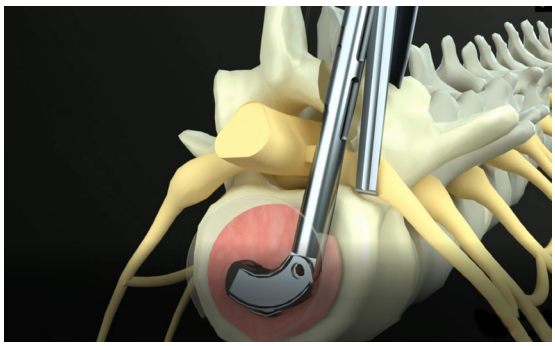


Figure 6a

Surgical Procedure

【Step 6】 Fusion device bone grafting

- According to the measurement results of the trail, the fusion cage of the corresponding height and size was selected and placed into the bone graft Packing Block (Figure 7a), compacted with a bone graft Impactor, and the fusion cage after bone grafting was taken with a wrench (Figure 7b).

The bone graft should protrude from the bone window, so that the bone graft is in full contact with the endplate to facilitate recovery.

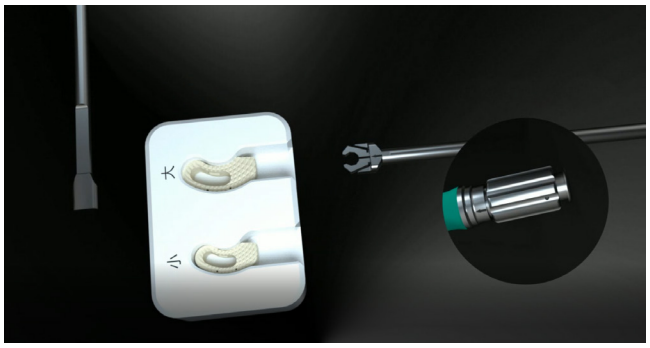


Figure 7a

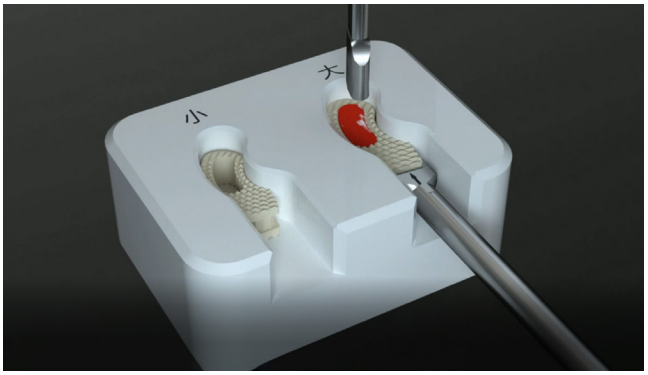


Figure 7b

Surgical Procedure

【Step 10】 Insert the fusion cage

- Check the connection of the wrench to the fusion cage, implant the fusion cage into the intervertebral space, confirm the direction of the fusion cage, the direction of the fusion cage points to the midline, and the fusion cage needs to be pushed into the intervertebral space using a Slide hammer. (Figure 10a).

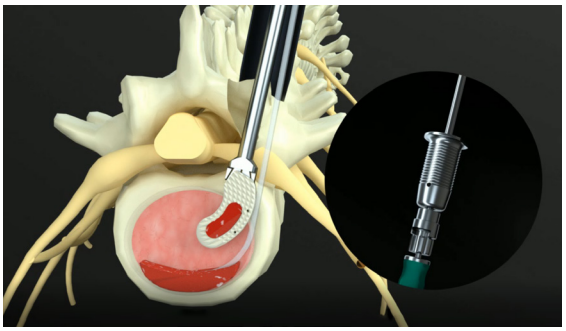


Figure 10a

- The head of the fusion cage should be positioned close to the anterior edge of the vertebral body, and the position of the fusion cage should be confirmed during axial rotation, and the two leading edge developing needles of the fusion cage should overlap in a straight line (Figure 10b).

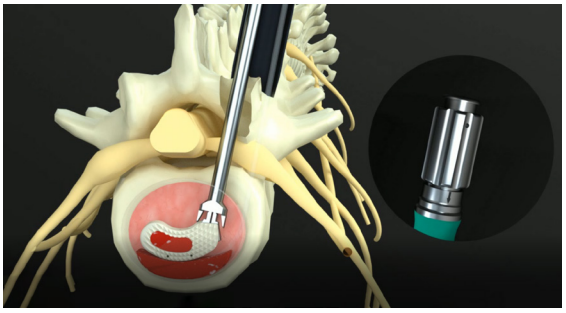


Figure 10b

Surgical Procedure

【Step 11】 Fill the intervertebral space

- After the fuser is implanted, the holder is removed and placed in the posterior and lateral intervertebral space.

- Bone grafting to speed fusion, using a bone graft funnel and a bone graft rammer (Figure 11a).

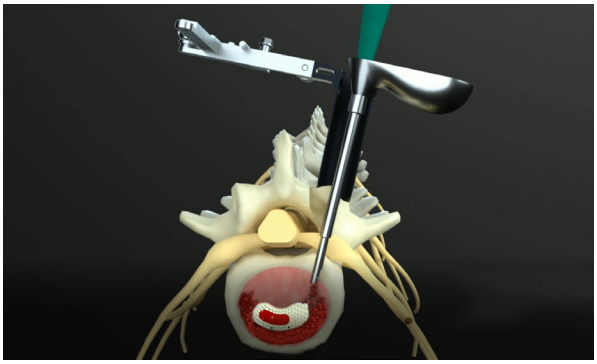


Figure 11a

Surgical Procedure

【Step 11】 Implantation of pedicle screw

- By fluoroscopy, the developing needle position is used to determine the degree of fusion fit (Figure 12a).

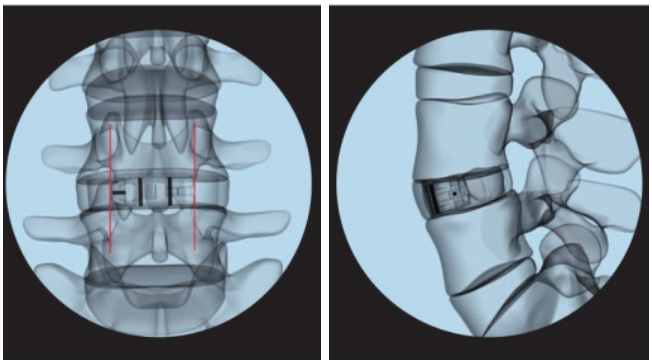


Figure 12a

- Visualization adjusts the position and distance of pedicle screw placement and immobilizes the fusion cage (Figure 12b).

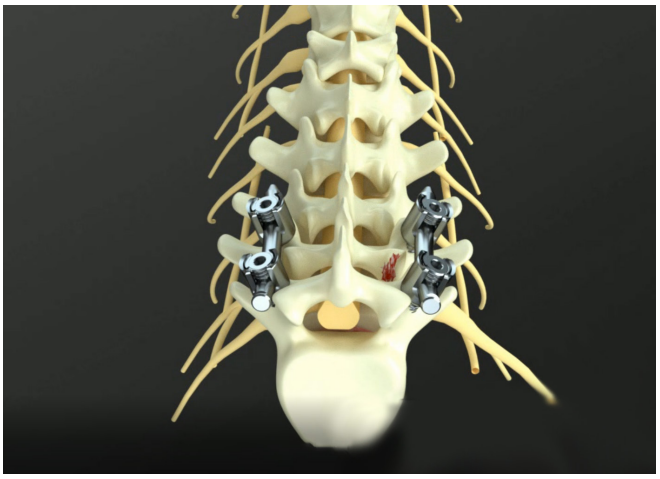


Figure 12b

Product Information

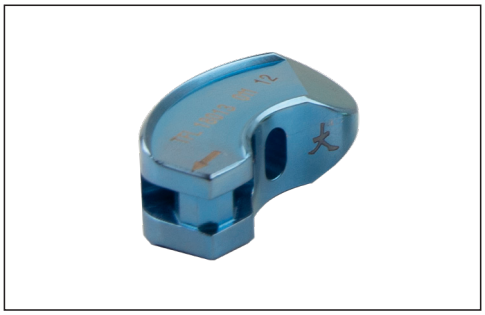
【Posterior Lumbar Interbody Fusion Cage (Sterilized)】

Description	Angle	Thickness	Length	Width	Product Code
10×28×7	0°	7	28	10	1130010007
10×28×8	5°	8	28	10	1130010008
10×28×9	5°	9	28	10	1130010009
10×28×10	5°	10	28	10	1130010010
10×28×11	5°	11	28	10	1130010011
10×28×12	5°	12	28	10	1130010012
10×28×13	5°	13	28	10	1130010013
10×28×15	5°	15	28	10	1130010015
10×28×17	5°	17	28	10	1130010017
12×31×7	0°	7	31	12	1131012007
12×31×8	5°	8	31	12	1131012008
12×31×9	5°	9	31	12	1131012009
12×31×10	5°	10	31	12	1131012010
12×31×11	5°	11	31	12	1131012011
12×31×12	5°	12	31	12	1131012012
12×31×13	5°	13	31	12	1131012013
12×31×15	5°	15	31	12	1131012015
12×31×17	5°	17	31	12	1131012017

Instrument Information

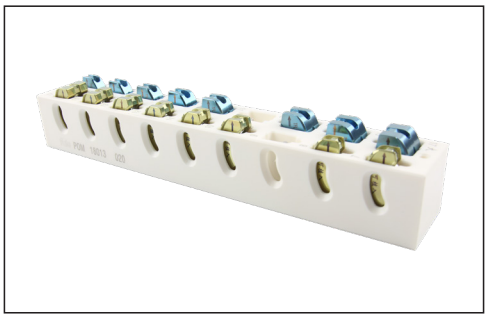
● 319-030
Orthopedic Wrench

● 319-010~319-018
Cage Trail(Kidney Type)



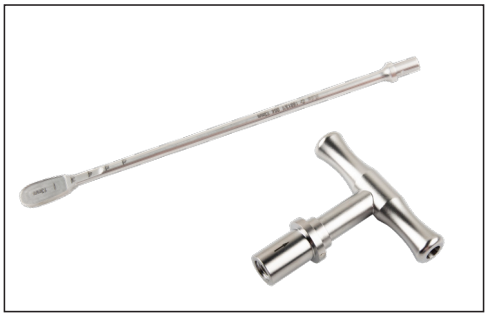
● 319-040~319-048
Cage Trail(Kidney Type)

● 319-020
Handle for cage trail



● 319-060
Packing Block

● 319-070
Impactor（Packing Block）

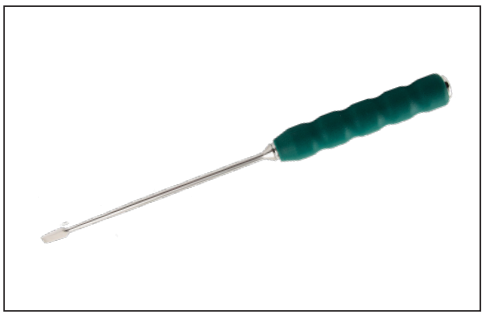


● 305290~305299/305370
Reamer（Ⅱ）

● 318-400
Bone Graft Funnel
(funnel for the anterior edge of the vertebral body)

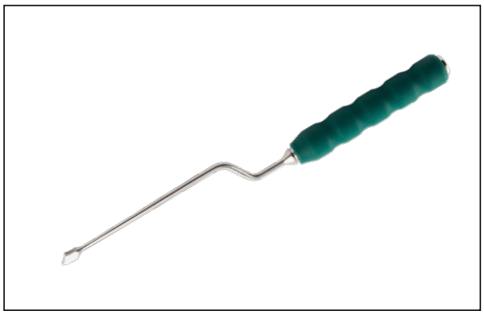
Instrument Information

318-410
Bone graft rammer

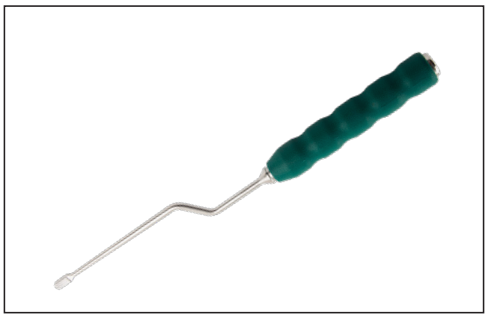


319-090
Scraper（solid）

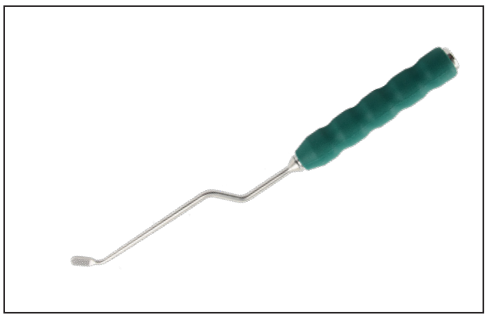
315-082
Slide hammer



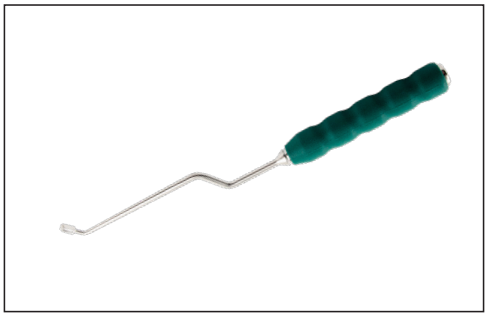
319-100
Temper with handle



319-110
Bone file (straight)



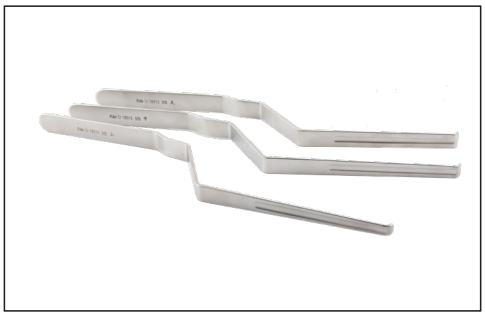
319-120
Bone file (bending)



319-150/160
Curette (ring) left/right

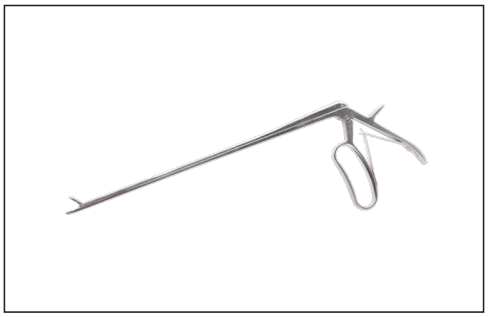
319-140
Curette (top)

Instrument Information



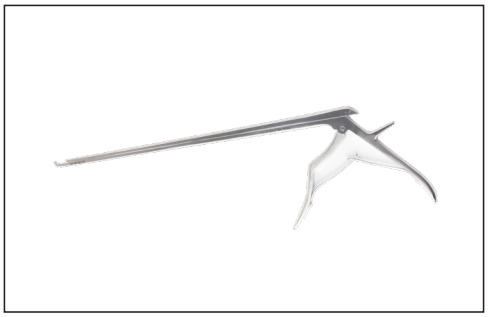
● 319-180/190/200
Hook Ⅰ /Ⅱ/Ⅲ

● 319-260
Positioning Deveice for cage（Ⅲ）

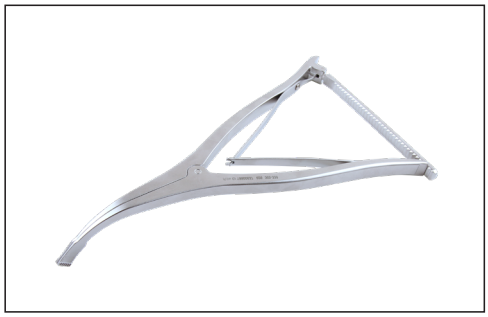


● 315-191
Straight Nucleus pulposus forceps

● 319-230
Bent Nucleus pulposus forceps



● 315-211
Rongeur (oblique)



● 305-330
Vertebral Distractor