

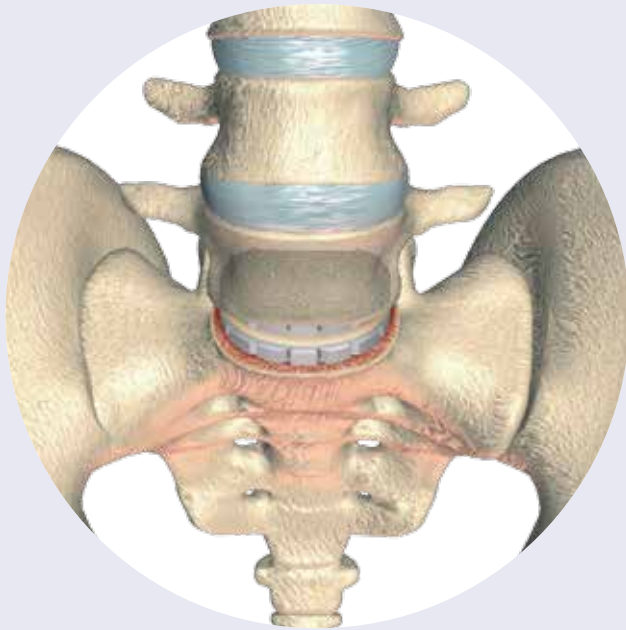
LP·ESP<sup>®</sup>

Lumbar Prosthesis

SURGICAL TECHNIQUE

**FH** ORTHOPEDICS<sup>®</sup>

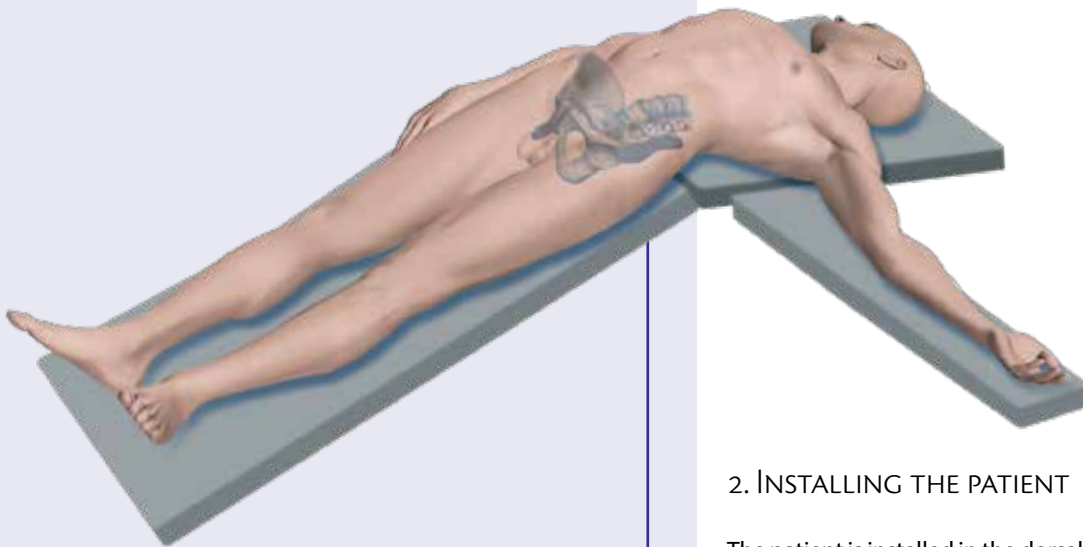
# SURGICAL TECHNIQUE



## 1. PRE-OPERATIVE PLANNING

Choosing the right moment is determined on the basis of the pre-operative radiological report composed of frontal and lateral weight-bearing X-rays (disc height and segment angulation), as well as measurements of sagittal balance (sacral slope, incidence and pelvic version).

This radiological report makes it possible to choose the size (10 or 12 mm) and angulation (7°, 9° or 11°) of the implant.

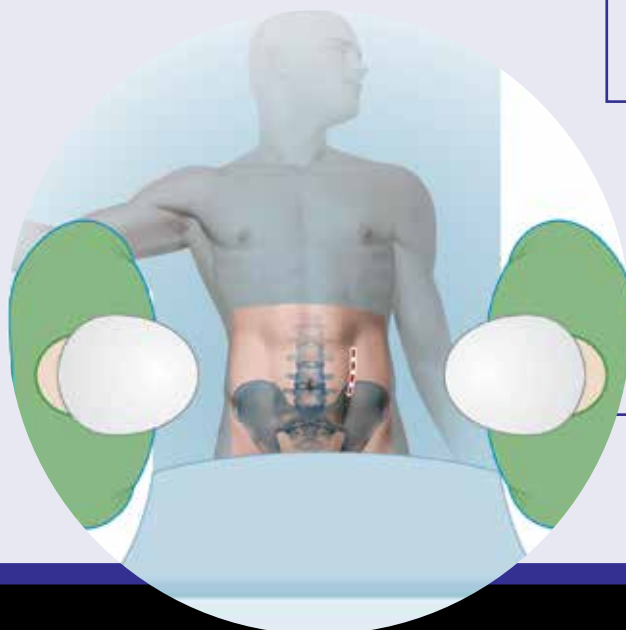


## 2. INSTALLING THE PATIENT

The patient is installed in the dorsal decubitus position on an operating table with a kidney elevator. This makes it possible to easily vary the lumbar lordosis so as to open up the disc space and restore sagittal balance.

The surgeon is positioned to the right of the patient and the assistant to the left as the approach used is generally the left para-rectal approach. A right para-rectal approach can also be used in L5-S1.

The incision is identified by means of fluoroscopy using metal pins so as to be centred on the disc space in question. Skin markings are made in this position. The position of the kidney elevator can then be modified to limit any tension on the vessels.





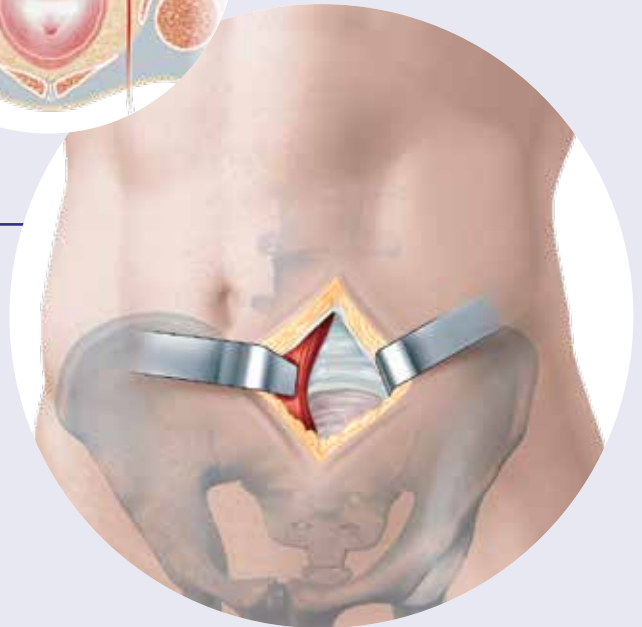
A 5 to 7 cm incision is generally sufficient for an operation on one or two levels. The incision is median or very slightly lateralised on the left. An incision of the Pfannenstiel type is also possible in L5-S1.

### 3. APPROACH = RETRO-PERITONEAL APPROACH

After incising the skin and subcutaneous tissue, an incision is made in the anterior flap of the sheath of the rectus abdominis. The posterior flap is moved aside using a foam-tipped swab, and the epigastric vessels remain connected to the rectus abdominis muscle.

On the extreme edge of the rectus abdominis, the deep flap of the right-hand sheath is sectioned from bottom to top so as to penetrate the extra-peritoneal space.

The peritoneum is progressively pushed back as far as the medial line so as to make the approach to the iliac vessels possible.



#### - IN L5-S1

The presacral plexus is pushed back carefully, avoiding any coagulation.

The presacral vessels are dissected and ligated.

The iliac vessels can then be pushed back on either side of the L5-S1 disc.

#### - IN L4-L5

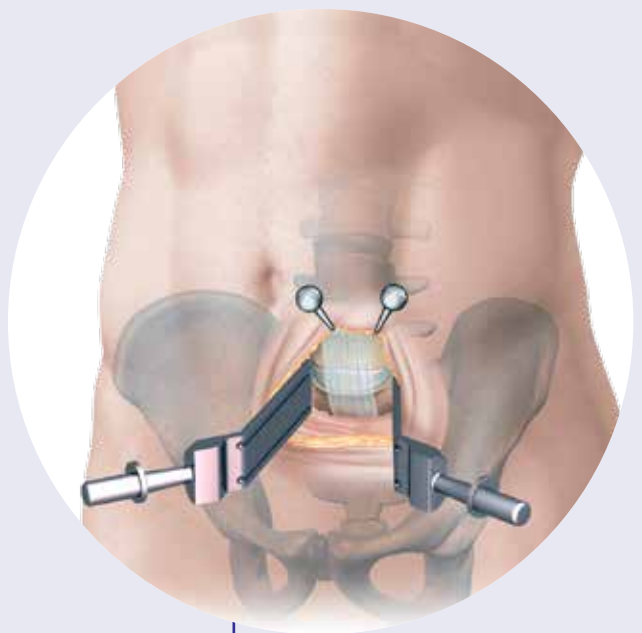
The iliac vessels are pushed back towards the right so as to make good exposure of the L4-L5 disc possible, and after having ligated an ascending iliolumbar vein if necessary.

#### - EXPOSING THE DISC

The **removable retractor** (ref. 255 770 to 255 773), either 18 or 28 mm wide and either 105 or 150 mm long, are positioned so as to make exposure easier. The retractor blades can be held in place by means of a **removable handle** (ref. 253 839) or fixed with **threaded pins** (ref. 245 132 & 245 133) either 180 or 225 mm long.

Setting of pins have to be done with **sleeves** (ref. 256 782 & 256 783).

**Protection caps** (ref. 256 781) are available.



# SURGICAL TECHNIQUE

## 4. PREPARING THE DISC SPACE

### - DISCECTOMY

After incising the anterior vertebral ligament, the discectomy is performed using a **rongeur** (ref. 256 784) and a curette as far as the posterior vertebral ligament. If necessary, a **distraction wedge** (ref. 254 575) makes lateral exposure better.

### - PREPARING THE VERTEBRAL PLATES

Avivement of the vertebral plates is done using **scissors** (ref. 253 069 & 254 937) either 10 or 20 mm wide.

A plane surface must be created to make good positioning of the implant possible.

### - MOBILISING THE DISC SPACE

The **distractor** (ref. 253 578) is used to make it possible to mobilise the disc space and obtain adequate intersomatic distraction.

It is occasionally necessary to release the posterior vertebral ligament and remove the posterior osteophytes using the Kerrison forceps.

### - POSITIONING THE TRIAL PROSTHESIS



253 840 - Trial prosthesis 7°/10



254 841 - Trial prosthesis 9°/10



254 844 - Trial prosthesis 11°/10



254 577 - Trial prosthesis 7°/12



254 842 - Trial prosthesis 9°/12



254 845 - Trial prosthesis 11°/12

The instrumentation includes **6 trial prosthesis** available in 2 heights (10 and 12 mm), and 3 angulations (7°, 9° and 11°). These make it possible to choose the size of implant best adapted in conformity with the pre-operative schedule.

The position of the trial prosthesis is controlled rapidly by means of two **alignment rods** (ref. 236 620).

Frontal and lateral fluoroscopic control is then carried out to verify that the trial prosthesis has been correctly centred, as well as to verify its anterior-posterior position.

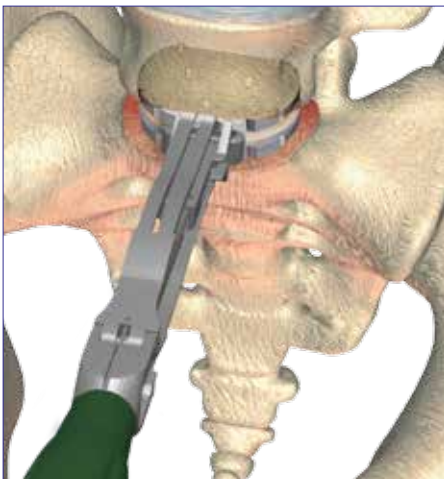
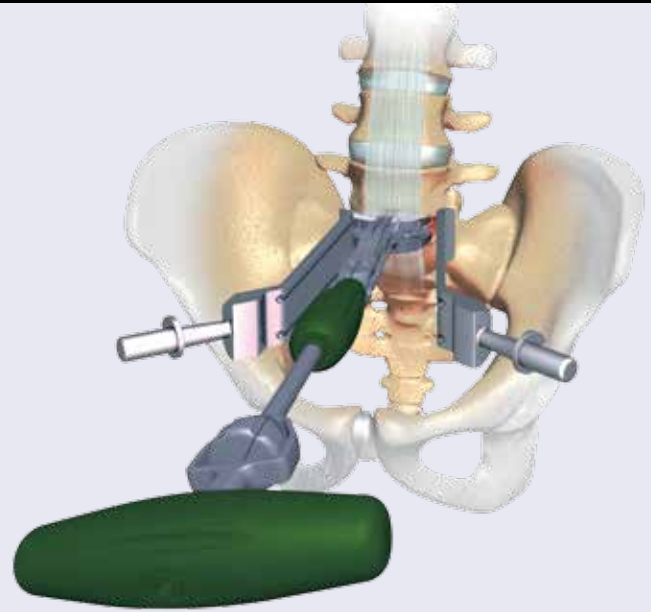
## 5. IMPLANTATION OF THE DISC PROSTHESIS

Markings with an electric lancet are made on the vertebrae so as to identify the centering of the implant. The trial prosthesis is removed and the disc implant is put into position using the **introducer** (ref. 266 427).

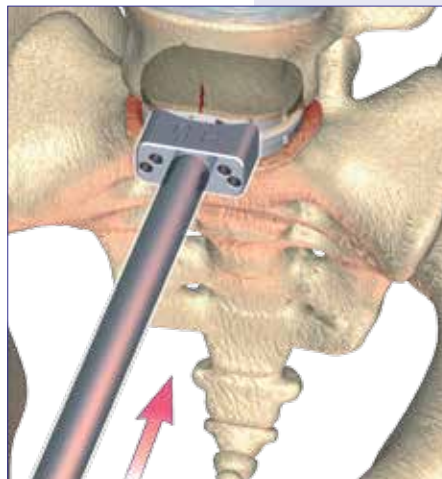
An orientator (ref. 256 788) makes it possible if necessary to modify the rotation of the implant.

A further fluoroscopic control can be carried out to verify the position of the implant.

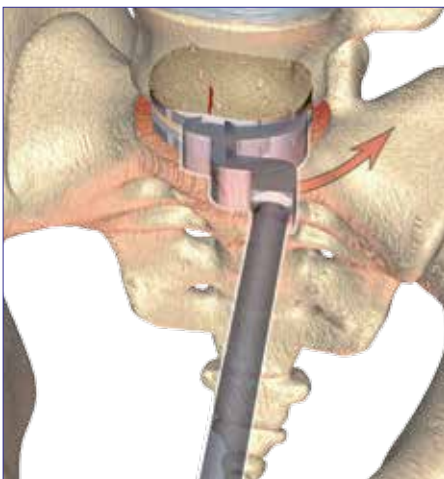
Definitive impaction is performed using the impactor-extractor (ref. 256 785 or 256 786) instrument, fixed on a removable handle (ref. 256 787).



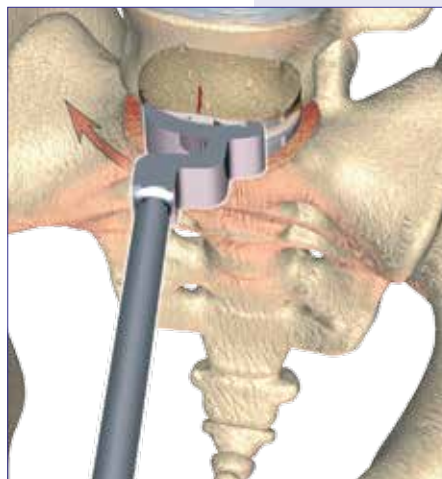
1<sup>st</sup> step - Implantation of the disc prosthesis



2<sup>nd</sup> step - Impaction

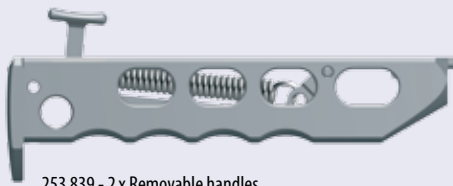


3<sup>rd</sup> step - Right rotation maneuver



4<sup>th</sup> step - Left rotation maneuver

## LP-ESP INSTRUMENTATION



253 839 - 2 x Removable handles



254 840 - Trial prosthesis - taille I2 H0 - 7° / 10



253 577 - Trial prosthesis - taille I2 H2 - 7° / 12



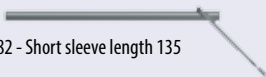
252 032 - 2 x Threaded pins ø3 length 140



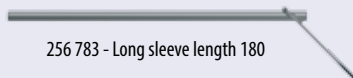
245 132 - 4 x Threaded pins ø3 length 180



245 133 - 4 x Threaded pins ø3 length 225



256 782 - Short sleeve length 135



256 783 - Long sleeve length 180



254 841 - Trial prosthesis - size J2 H0 - 9° / 10



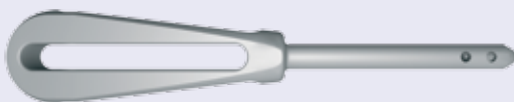
254 842 - Trial prosthesis - size J2 H2 - 9° / 12



254 844 - Trial prosthesis - size K2 H0 - 11° / 10



254 845 - Trial prosthesis - size K2 H2 - 11° / 12



245 134 - Screwdriver



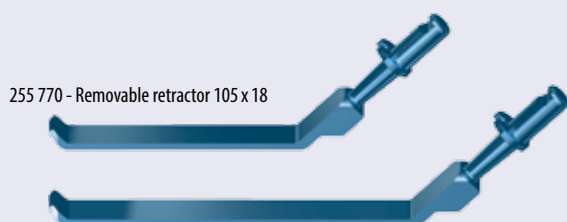
256 785 - Impaction-extraction T H0



256 786 - Impaction-extraction T H2

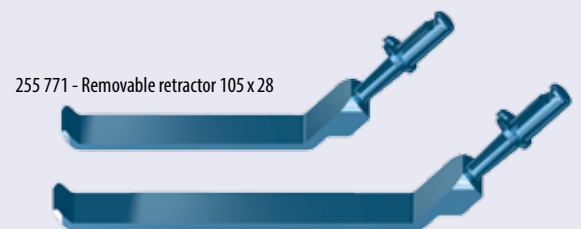


256 781 - 8 x Caps for pin



255 770 - Removable retractor 105 x 18

255 772 - 2 x Removable retractors 150 x 18



255 771 - Removable retractor 105 x 28

255 773 - 2 x Removable retractors 150 x 28



253 069 - Scissors 6x10



254 937 - Scissors 6x20



256 788 - Orientator



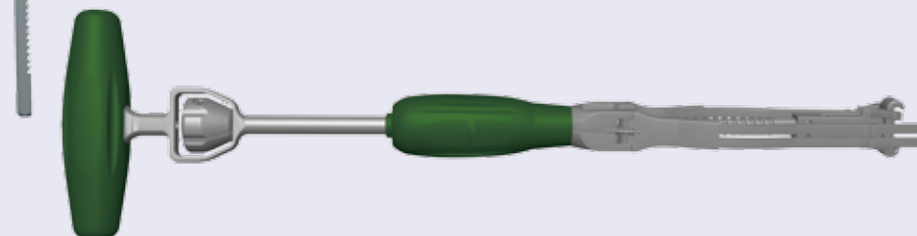
256 787 - Impactor-extractor handle



254 575 - Distraction wedge



253 578 - Distractor



266 427 - Introducer

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236 620 - 2 x alignment rods for gripping device

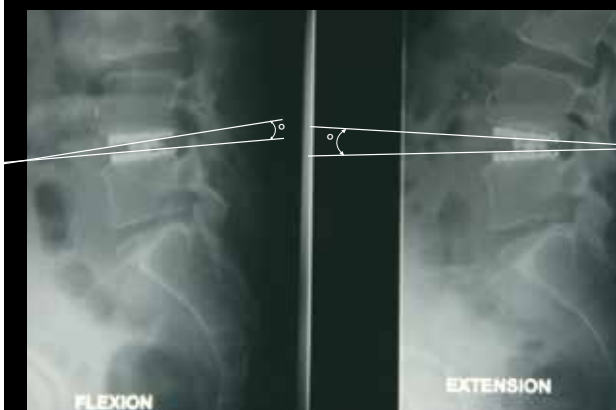
## INDICATIONS

- Lumbar discopathy that is resistant to medical treatment
- Lumbar discopathy disease after treatment of a herniated disc
- Radiculopathy by a recurrence of a disc hernia  
(except for excluded hernias)

The LP-ESP® prosthesis should give a significant reduction in pain severity, re-establish lumbar curvature and the natural disc function. Fitting the prosthesis involves a particular anterior mini-approach. Minimally-invasive technique reduces patient hospital stay and duration of rehabilitation.

## CONTRAINDICATIONS

- Spinal stenosis, radiculopathy
- Increased segmental instability
- Spinal deformities, spondylolisthesis above 25 %
- Radiological confirmation of severe facet joint disease or degeneration
- Osteoporosis, osteochondrosis, and severe osteopenia
- Acute or chronic systemic, spinal, or localized infections
- Systemic and metabolic diseases
- Any medical and surgical conditions precluding the potential benefit of spinal surgery
- Foreign body sensitivity to the implant materials
- Dependency on pharmaceutical drugs, drug abuse, or alcoholism
- Pregnancy
- Obesity
- Lack of patient cooperation



## LUMBAR DISCS



Reference	Designation
255682	Inclination 7° height 10
255683	Inclination 7° height 12
255687	Inclination 9° height 10
255688	Inclination 9° height 12
255690	Inclination 11° height 10
255691	Inclination 11° height 12



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quality for health

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