

**SYNCHRO: TLIF CAGE  
FOR LUMBAR INTERBODY FUSION**

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# SYNCHRO: TLIF CAGE FOR LUMBAR INTERBODY FUSION



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Manager  
ARCA-MEDICA

## **SYNCHRO – product and history**

The complex spinal pathology requires different treatment strategies, which are all patient oriented.

It is ARCA-MEDICA's goal to provide physicians and their patients with the adequate corresponding implants for the various indications and for their related specific surgical techniques.

After our implant for dynamic lumbar stabilization (Le U), we are now happy to present our mini-invasive TLIF cage SYNCHRO for instrumented stabilization.



Dr. David Fischer-Lokou  
Neurosurgeon  
at the University  
Hospital of Strasbourg

To develop this cage, we worked closely with Dr David Fischer-Lokou, neurosurgeon at the University Hospital of Strasbourg (France), who was awarded with the „Victoires de la Médecine“ in 2009 for his work on this particular mini-open TLIF procedure.

Together, we looked for a cage, easy to insert and able to fill correctly the disc space.

What is convincing in SYNCHRO is that the cage insertion into the disc space is optimized due to the joint mechanism. In this way, the implant can slide easily into its ideal position. A patented solution which made us become thrilled.

We wish you a successful spinal stabilization aiming for satisfied patients.

ARCA-MEDICA  
Manager



## Indications for SYNCHRO

SYNCHRO is a new type of cage for lumbar fusion with a TLIF access.

In case of:

- degenerative lumbar disc disease
- degenerative instabilities and spinal stenosis
- spondilolisthesis, retrolisthesis
- disc herniation with recidive

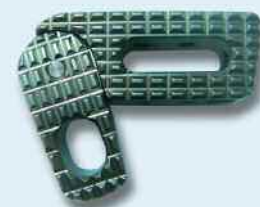
## SYNCHRO mechanism

The implant is made of an anterior and a posterior element. Both of them are linked with joint. The mobility of both elements secures an optimized implant insertion. The anterior element is inserted into the disc space through the foramina and is properly oriented with the help of the posterior element. In its optimized positioning, the angle between both elements can vary from 45 to 90 degrees.

## What does SYNCHRO allow?

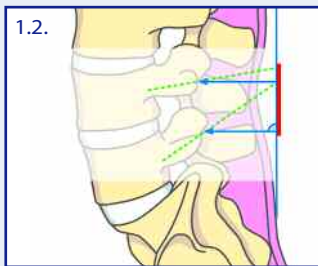
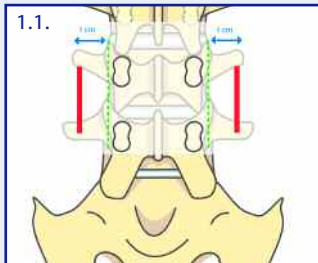
SYNCHRO

- opens intra-operatively
- fills ideally the disc space
- secures a stable fusion
- allows a reliable contact in the anterior area of the inter-vertebral space
- secures the lordosis stability
- opens the opposite site



# SURGICAL PROCEDURE

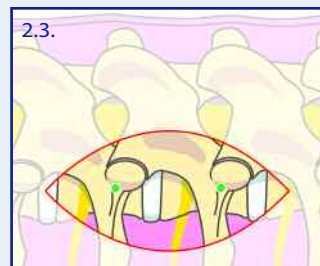
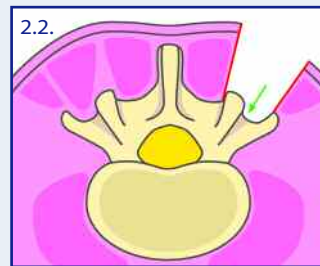
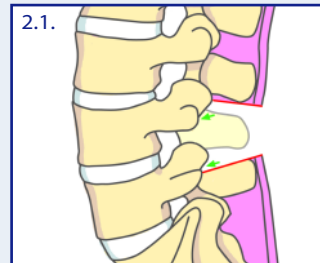
## 1. Radiological orientation



**1.1.** On the AP radiological view, the skin incision is going 1 cm laterally from the line which links the external cortical of the pedicles.

**1.2.** Attention on the sagittal orientation. The points of entry of the pedicle screws are defined at the junction of the lines covering sagittally the pedicles (blue) with the convergent marker lines of the pedicles (green).

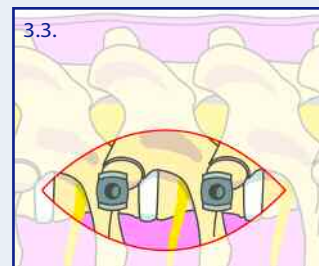
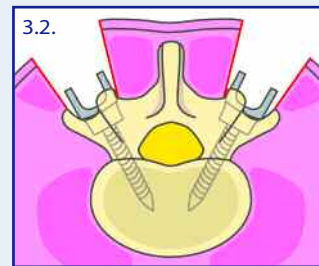
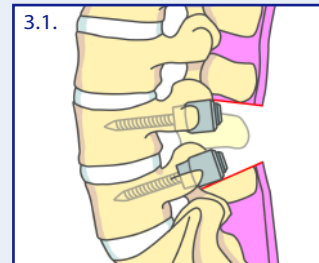
## 2. Pedicle access



**2.1.** In a lateral view and **2.2.** In an axial view, the ideal points of entry are located in the angle between the articular facet and the processus transversus.

**2.3.** An additional radiological image in the pedicle access way can be helpful. The length of the skin incision depends of the access possibility to the pedicle entry points and of the chosen retractor system.

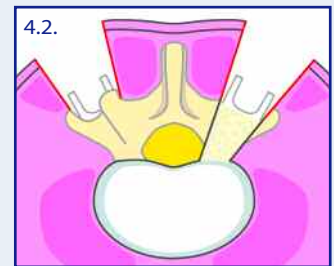
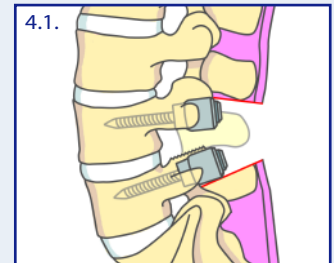
## 3. Pedicle screws insertion



**3.1.** Lateral view **3.2.** The screw insertion is convergent.

**3.3.** Intra operative view of the arthrectomy.

## 4. Control of the pedicle screws positioning

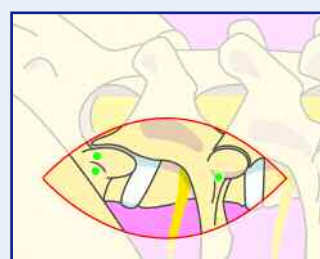


**4.1.** The correct level of the procedure as well the adequate positioning of the pedicle screws are checked with the C-arm.

**4.2.** The arthrectomy is performed above the pedicle. An undercutting on the opposite side can be performed in case of spinal stenosis. During the foraminotomy, the upper articular facet of the inferior vertebra is removed closely to the pedicle, in a way to expose the disc. At this level, there is no nervous root. In case of spondilolisthesis, there can be important anatomical variations.

**4.3.** When removing the cranial part of the articular facet, watch out for the root. After removing the yellow ligament and eventually the peridural veins, the disc space is reachable.

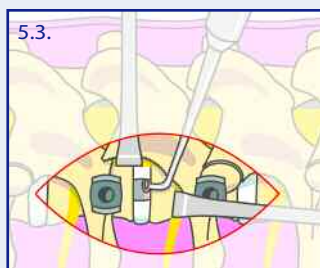
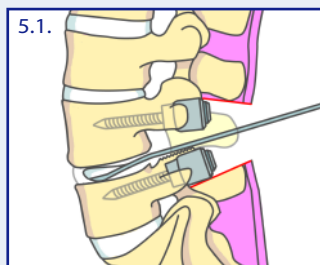
### Exceptional case: Access at the lumbo-sacral junction



Due to the specific anatomy of the iliac crest, the access points of the screws are difficult to find.

● Possible point of entry of the screws

## 5. Preparation of the disc space

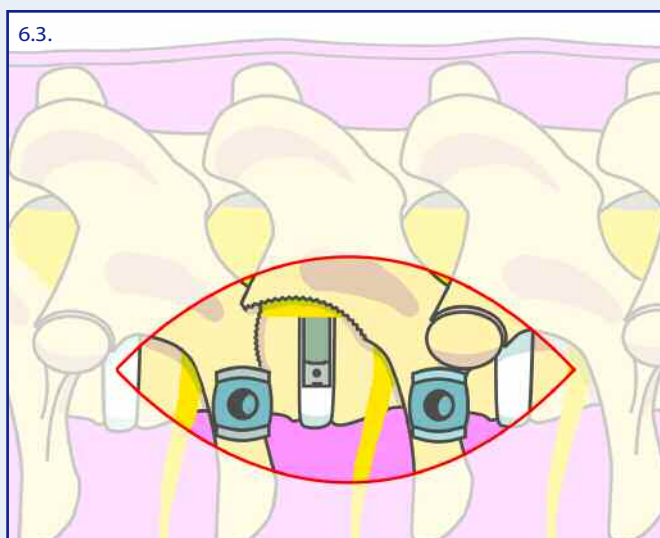
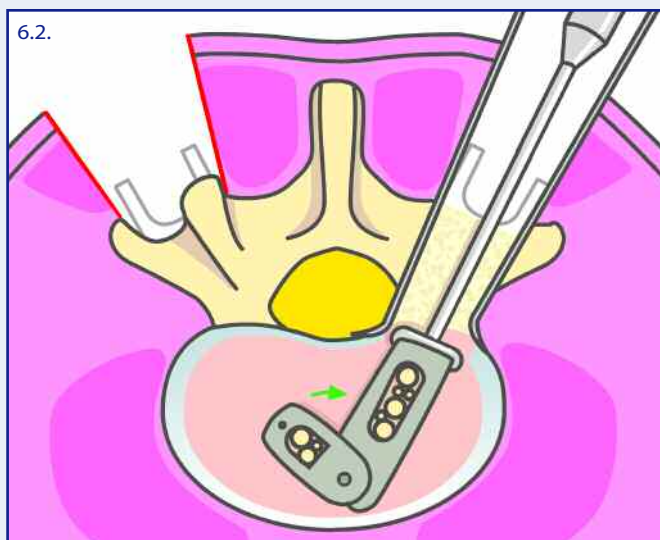
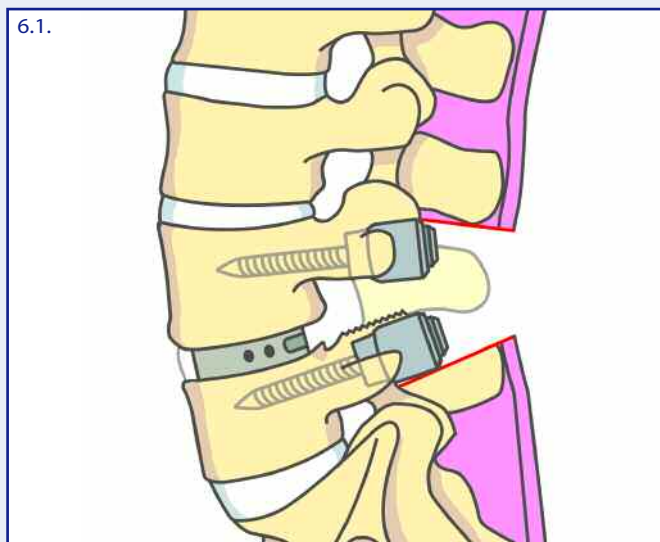


### 5.1. and 5.2.

The disc space is opened and completely curetted onto the opposite side in a way to prepare the intersomatic space. All cartilages are removed. Do not damage the integrity of the vertebral body cortical.

**5.3.** Retractors can be inserted medially and cranially in a way to protect the dura and the nerve roots.

## 6. Positioning of the SYNCHRO cage



### 6.1. and 6.2.

Trials are inserted into the disc space until radiological control shows a correct distraction with lordosis.

To ease the optimal positioning of the trial, when anterior part is introduced into the disc space, it is useful to fold first the trial holder toward the middle line and then to bring it again in the vertical position.

This operation must be repeated during the final step of the cage insertion.

The optimal positioning of the cage is achieved when the anterior part of the disc space is covered. The cage, previously filled with bone fragments from cancellous bone, is pushed afterward wide contro-laterally in a way to open the opposite foramina. A simple convergent movement allows easily the joint closure and makes easier the inside sliding of the cage.

**6.3.** Cage position

# EXAMPLE



AP radiological image  
2 levels  
*SYNCHRO TLIF*



Lateral view

## IMPLANTS AND INSTRUMENTS



### Implants

Peek

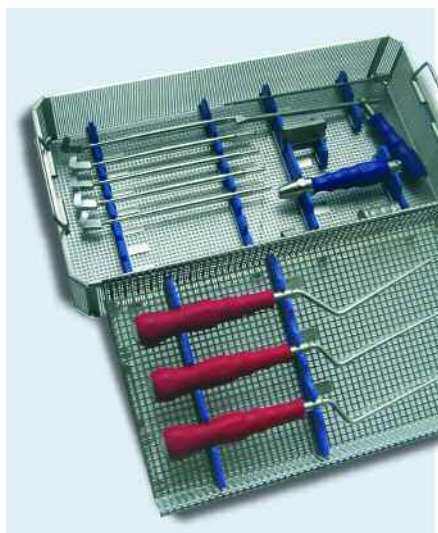
Part number

AMT-100-07-S  
AMT-100-08-S  
AMT-100-09-S  
AMT-100-10-S  
AMT-100-11-S  
AMT-100-12-S  
AMT-100-13-S



Titanium

AMT-200-07-S  
AMT-200-08-S  
AMT-200-09-S  
AMT-200-10-S  
AMT-200-11-S  
AMT-200-12-S  
AMT-200-13-S



### Complete instrumentation

Part number

AMT-500-K01

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