

# ***A2L – ALIF Double Locking Cage***

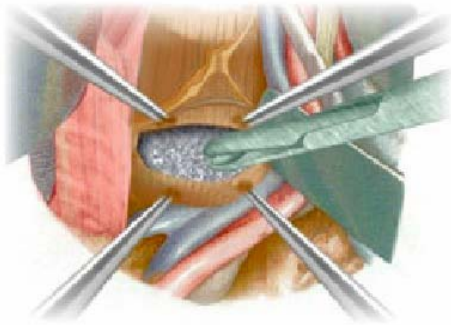
## ***Surgical Technique***



***A2L-Alif Double Locking Cage Interbody Fusion System***

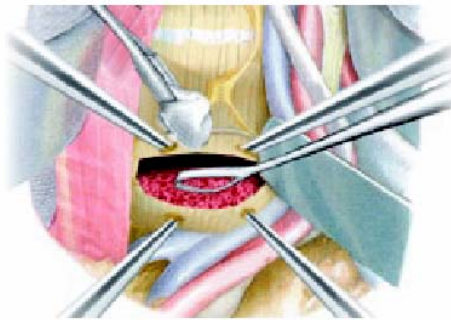
## Introduction

The **A2L-ALIF Double Locking Cage** provides a locking mechanism, which has to be turned to allow the blades to lock into the endplates at the end of the procedure.



## Discectomy

Prepare the intervertebral space, resect the remaining nucleus pulposus using the rongeur for a proper implant fit.

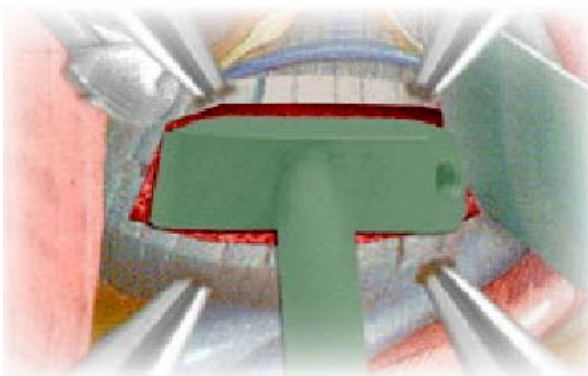


## Curettage

Prepare the endplates of the vertebrae using the curettes, but stop at bleeding start to avoid weakening of the endplates.

*This is important to facilitate vascular supply to the bonegraft without weakening the endplates.*

Note: it is important to prepare correctly the cage's siege by removing all irregular bony protuberances.



## Distraction

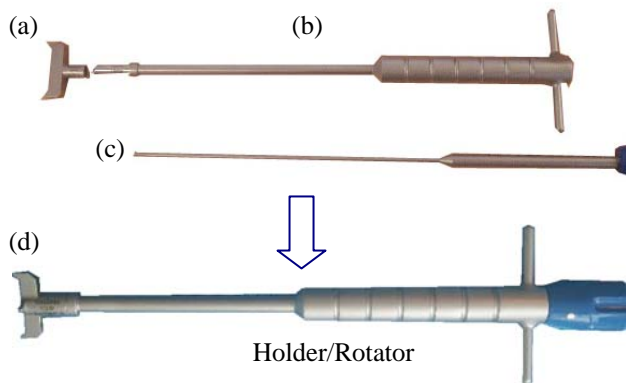
Expand the intervertebral space: Insertion of the smallest trial-cage appropriate to the anatomy, which serves as a distractor as well. Expand the intervertebral space using bigger sizes of trial-cages until the desired height is achieved.

Important: the chose trial cage has to be steadily screwed to the holder for trial cage.

Proceed to the preparation if intervertebral space as far as possible to the posterior wall of the vertebral body.

A lateral application is also possible by using the ventrolateral hole of the trial-cage.





### Assembly of the implant, holder and impactor

Initially, the safeguard (a) is screwed into the rotator (b).

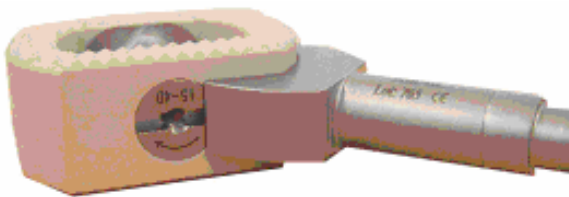
Then the holder (c) is introduced into the rotator (as shown by 'd').

Finally, the implant should be firmly screwed to the implant holder/rotator.

### Lateral application

The cage can also be placed laterally by using the ventrolateral hole of the cage and by using lateral safeguard of the rotator.

Attention : In case of lateral application, be careful to introduce the lateral safeguard into the rotator.

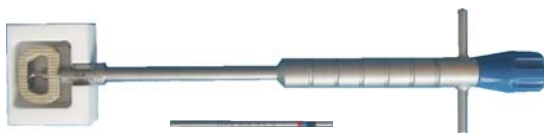


IMPORTANT: In case of lateral application, it is not possible to lock the blades from lateral side, but the surgeon can :

- 1)remove the safeguard off of rotator,
- 2)put up the rotator + holder (along with the central axis) on the frontal screw of the cage,
- 3)turn the blade
- 4)turn the security screw by the tip of holder.

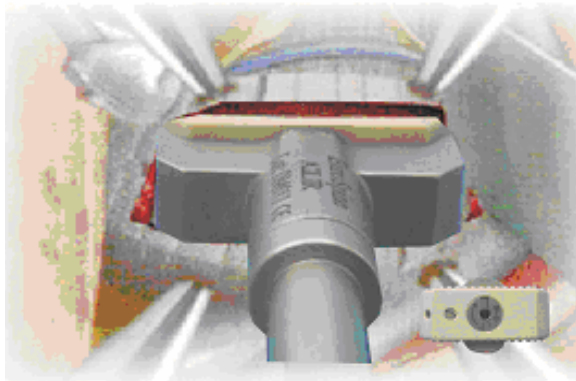


**Mind your Finger** when you put up together the “rotator & holder & cage” as the blades may turn if forced, as shown.



### Preparation of the implant

The “rotator & holder & cage” are then inserted into the filling socket in order to fill up the cage by bone and/or allograft material. The bone graft can be pushed into void space of the cage by an impactor.



#### Insertion of the implant

After inserting the implant between the two vertebrae, place sufficient bone graft into the endplates.

Attention : The handle must remain in his horizontal position during the whole impacting. This ensures that the blades remain closed.

Attention: leave the instrument attached to the implant for the following assessment.

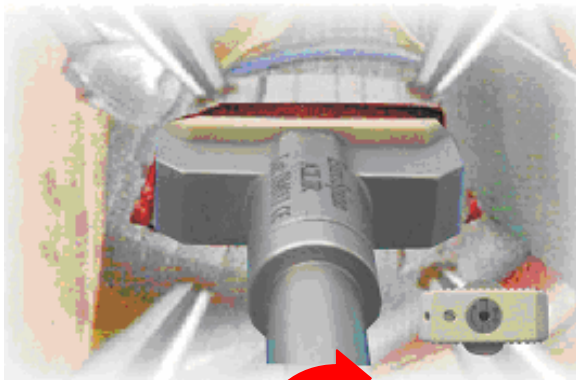


#### Assessment

Make an X- ray control per-operative to check the good positioning of the cage behind the anterior wall of the anterior cortex.

The screw, axis, blades and the titanium markers are serves as markers for the correct placement of the cage.

Note: The surgeon has to take care of the good positioning of the cage in the intervertebral space with regard to the physiological conditions of the patient.



#### Locking

The implant can be locked once its correct positioning is assessed.

**Turn the rotator clockwise (about 90°) until the handle of the instrument is perpendicular to the endplates of the vertebra.**



Test the solidity of the anchorage of the blade by slightly pulling on the (holder & rotator) implant.

Attention: In case of hard bone, make a gradual rotations & come back until to get progressively at 90° of rotation.

Note : In case of osteoporosis or instability of the cage or the blades, use the cage without opening the blades.

### Safety screw

To prevent any accidental return of the blade, once the blades are engaged into the end-plates, engage safety screw by the tip of holder as shown here.

Note: Do not force during the screwing; 2 to 3 turns are enough.



The position of the blades is fixed by security screw. In case of revision, the security screw must be unscrewed with the tip of holder. Unscrew slowly up to 3 turns until there is a slight resistance.



### X-ray assesement

#### Undertake x-ray inspection

#### NOTE:

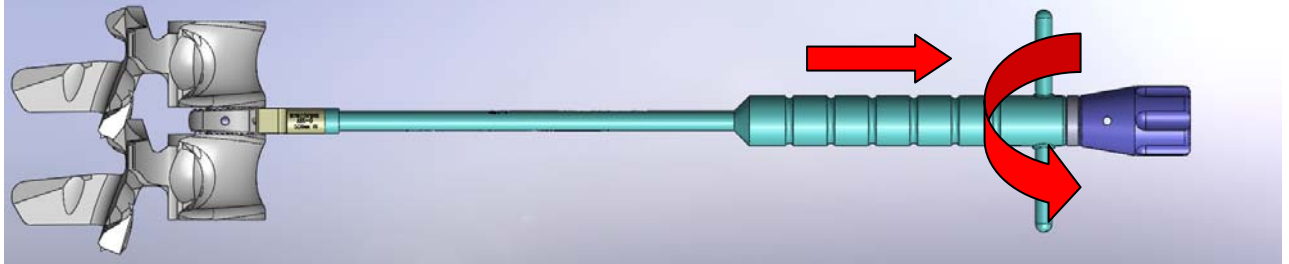
In case of instability, of lateral application or other applications than L5-S1 use a further fixation such as an anterior plate or screw system.

Generously place additional bone graft on the anterior side of the implant ;

This implant has to be considered either as a stand alone device (L5-S1) or as a standard implant together with dorsal fixation or posterior in the other levels.

**How to remove the cage if needed :**

- 1) use the tip of holder to unscrew the security screw of the cage (unscrew anticlockwise up to 3 tours until there is a slight resistance),
- 2) put up the “rotator & holder” on the cage,
- 3) turn 90° anticlockwise the handle of rotator (until the handle is parallel to the cage). In this position the blades are closed,
- 4) release the cage from all bone grafts around,
- 5) Undertake an x-ray to check,
- 6) remove straightly and cautiously the cage.





A2L ALIF Distractor/Trial Cage 8-4°	AIF8-4
A2L ALIF Distractor/Trial Cage 9-4°	AIF9-4
A2L ALIF Distractor/Trial Cage 10-4°	AIF10-4
A2L ALIF Distractor/Trial Cage 11-4°	AIF11-4
A2L ALIF Distractor/Trial Cage 12-4°	AIF12-4
A2L ALIF Distractor/Trial Cage 13-4°	AIF13-4
A2L ALIF Distractor/Trial Cage 13-9°	AIF13-9
A2L ALIF Distractor/Trial Cage 13-13°	AIF13-13
A2L ALIF Distractor/Trial Cage 15-4°	AIF15-4
A2L ALIF Distractor/Trial Cage 15-9°	AIF15-9



HRC ALIF Rongeur, 250 curved K323



HRC ALIF Rongeur, 250 straight K324



HRC ALIF Curette 1	HRCICUR1
HRC ALIF Curette 2	HRCICUR2
HRC ALIF Curette S1	HRCICURS1
HRC ALIF Curette S2	HRCICURS2
HRC ALIF Wolkmann Curette, 5mm	ES760501.05



A2L Rotator AIR6



A2L Safeguard AIR-G



A2L Lateral Safeguard AIR-GL



A2L Holder AIP



Holder, rotator & safeguard Assembled



Holder, rotator & lateral safeguard Assembled



ALIF Trial Cage Holder HRCAIPF



ALIF Bone Impactor HRCAIMP

*EUROSPINE Srl*



A2L Socket

SA2L