

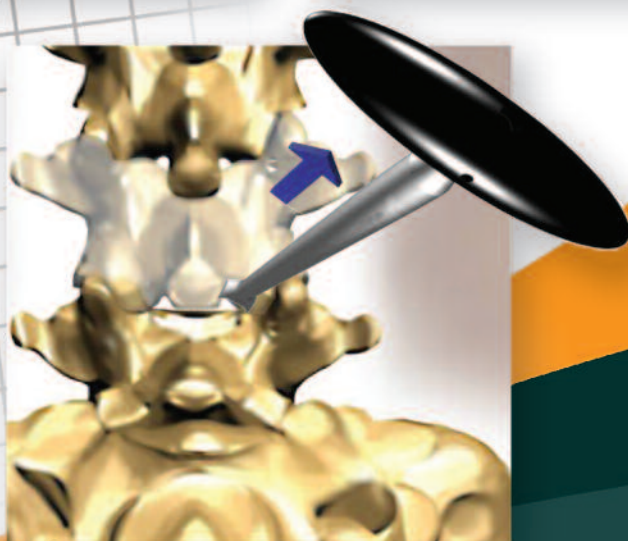
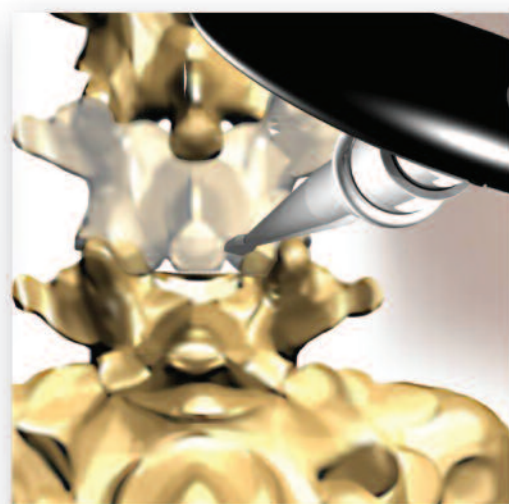
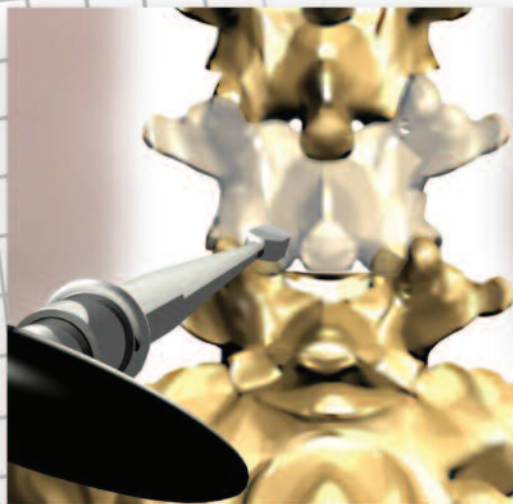
# SmartCages™



ORTHOPAEDIC™

Innovation

Surgical Technique  
for SmartCages™



A MEDSMART SOLUTIONS FAMILY MEMBER

### Pre-op Considerations

The patient must be aware of all the risks involved including persistent pain, infection, neurologic injury, vascular or visceral injury or failure of the fusion resulting in hardware loosening and/or breakage, needing further surgery before he/she decides to have the operation.

The surgeon might have to take into consideration introducing autologous blood transfusion during multi level fusions or during very long surgeries.

Using the pre-op RX MRI and CT the surgeon must determine the levels to be intervened and determine surgical approach.

First generation antibiotics is recommended to be administered prior to incision to reduce infection risk.

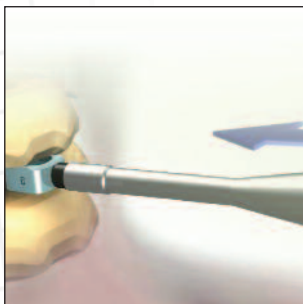
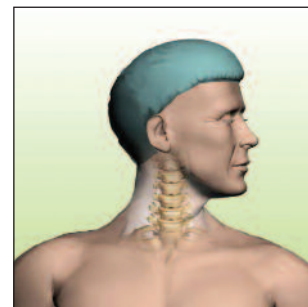
### Cervical Surgical Technique

The patient is placed in the supine position with the head in extension.

The posterior cervical spine is supported to maintain the normal cervical lordosis.

A transverse skin incision is made.

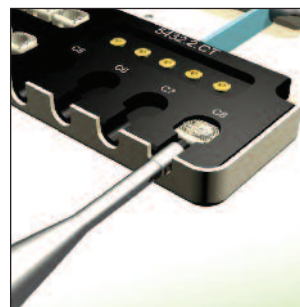
A vascular dissection plane is developed between the trachea/esophagus, medially and the sternocleidomastoid/cartoid sheath laterally.



#### Step One

Select the correct size of cage to use.

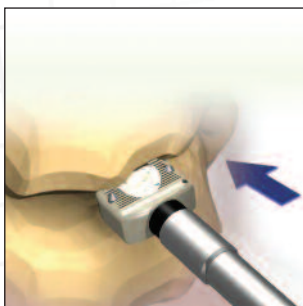
To be able to do this use the corresponding probes to see which is the one that fits best.



#### Step Two

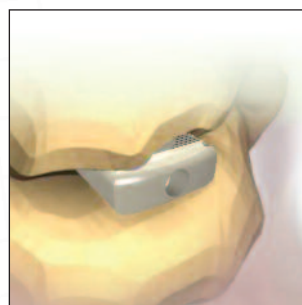
Assemble the selected cage in the introducer.

Introduce the allograft inside the cage.

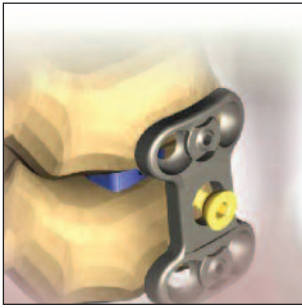


#### Step Three

Introduce the cage in the intersomatic space.

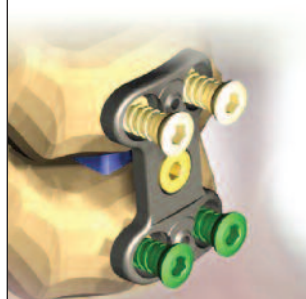


View of the positioned cage.



## Step Four

If necessary you may insert an Easy Plate.



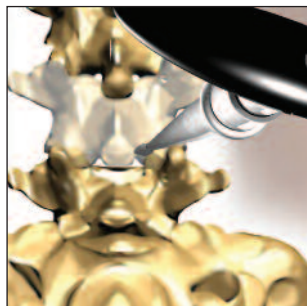
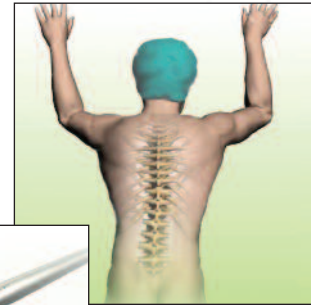
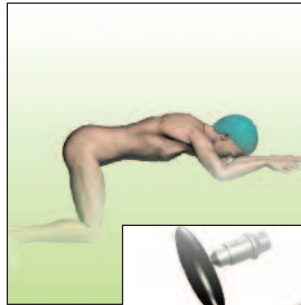
## Lumbar Surgical Technique

Once the patient is anaesthetised, he or she must be placed in a prone or kneeling position with the abdomen free.

We recommend to use an operating table which allows the patient to be positioned with the abdomen free of pressure, reducing intraoperative bleeding.

Hypotensive anesthesia, where appropriate, is helpful to reduce intraoperative bleeding.

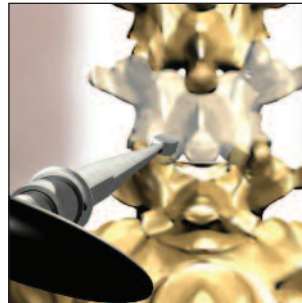
All the lumbar instruments with the 'T' handle quick release must be used.



## Step One

The first step to do is select the correct size of cage to use.

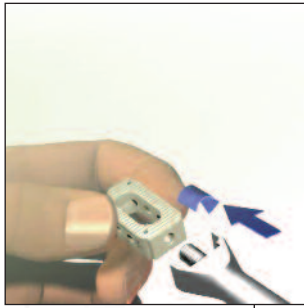
To be able to do this use the corresponding probes to see which is the one that fits best.



## Step Two

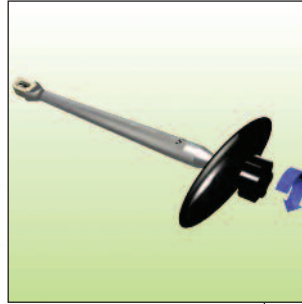
Prepare the space to place the cage by means of the broach.





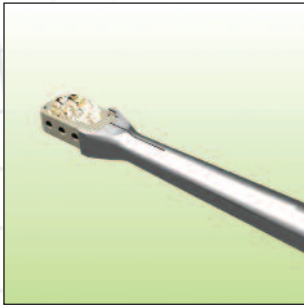
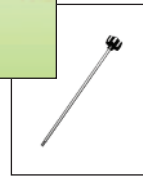
### Step Three

Assemble the selected cage in the introducer.



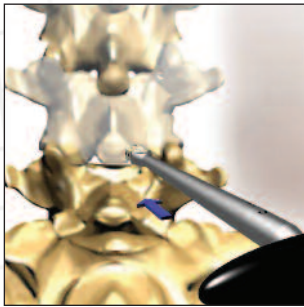
### Step Four

Adjust the cage to the introducer.



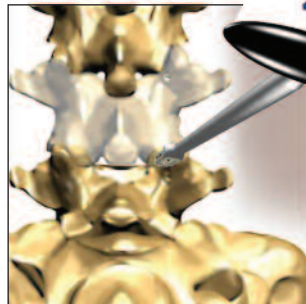
### Step Five

Introduce the allograft inside the cage.



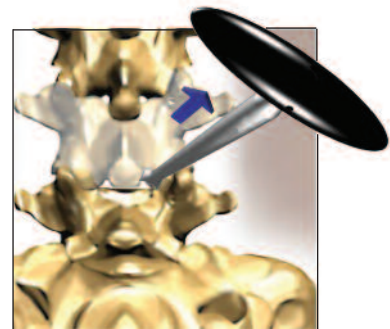
### Step Six

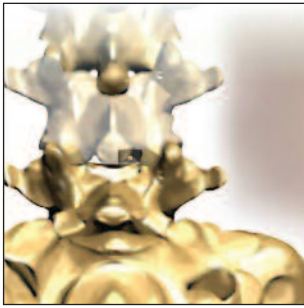
Introduce the cage in the intersomatic space, the handle of the introducer must stay in a cephalo caudal position.



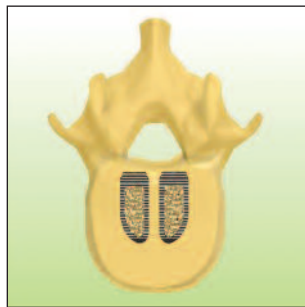
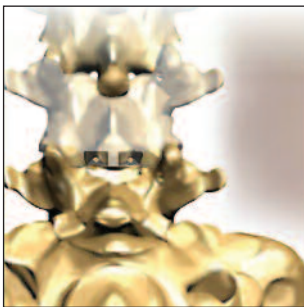
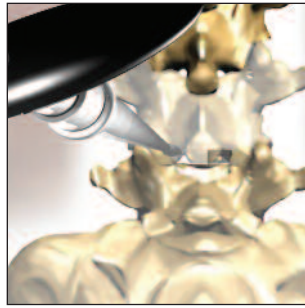
### Step Seven

Loosen the cage and remove the introducer.





View of the positioned cage.



Final position of both cages.

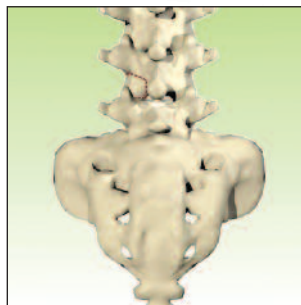
To position the second cage, repeat steps one to seven.

## TLIF Surgical Technique

### Step One

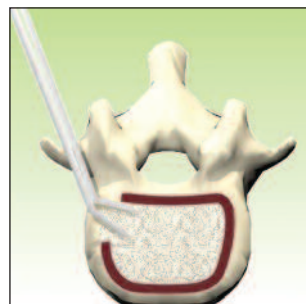
With the patient supine, a cutaneous incision, parallel to the sagittal plane, is performed on the affected area, about 4 to 4.5cm off the middle line.

A facetectomy is performed to allow insertion of interbody cage.



### Step Two

Herniated nucleus pulposus is removed by aspiration.



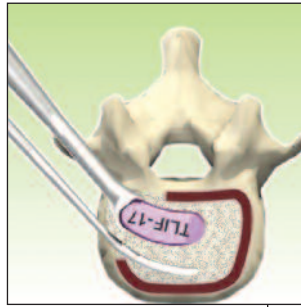
To complete resection of a portion of the affected disc, a pituitary rongeur is inserted.

## Surgical Technique



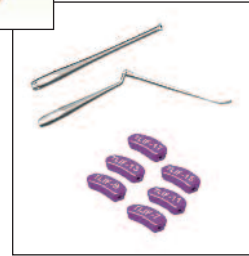
### Step Three

Using a plane scraper, the cartilaginous end plates are excised.



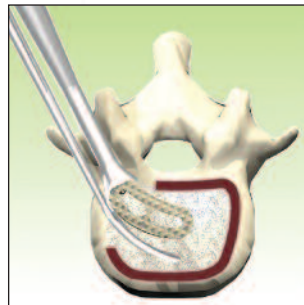
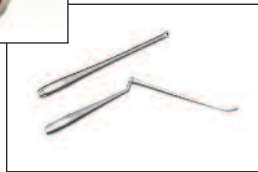
### Step Four

When the area is clean, a K-wire is positioned to assist with the procedure. Then, several sizes of spacers are mounted on the inserter to find the best length to accommodate varying patient anatomy.



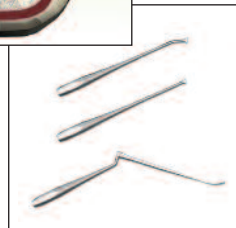
### Step Five

When the appropriate implant size is found, the TLIF cage is inserted in the interbody space.



### Step Six

Straight and angled impactors are used to adjust the implant position after insertion.



This figure shows the implant in its final position packed with the bone graft, which favours spine fixation.



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