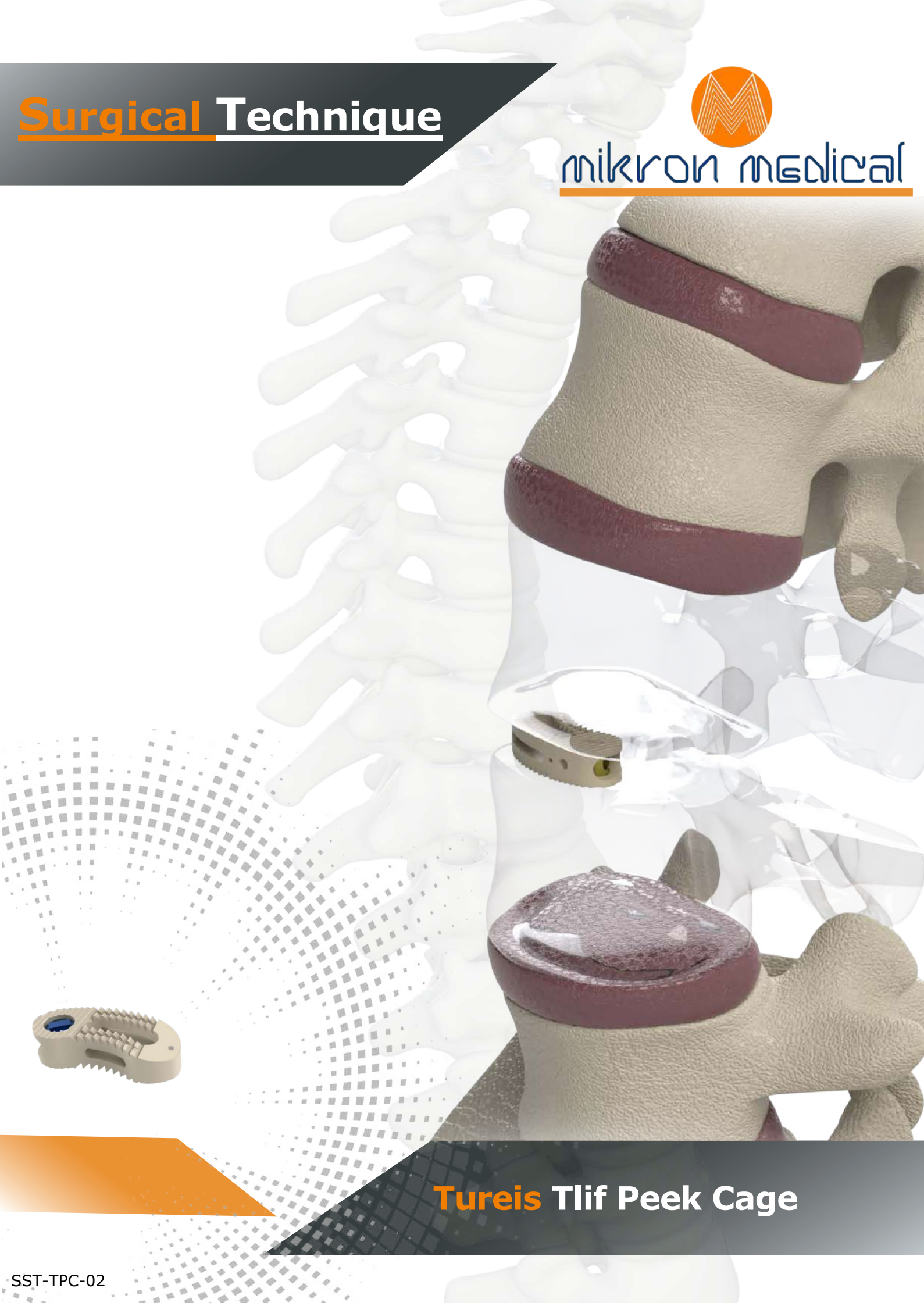


# Surgical Technique



mikron medical



## Tureis Tlif Peek Cage



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## Introduction

**Mikron Tureis TLIF Peek Cage** technique to spinal fusion has proven to be safe and efficacious approach for the treatment of the lumbar spine. Posterior Lumbar Peek Cage can be used for posterior lumbar approach for following indication: Mechanical Instability, Spondylolisthesis and Degenerative disc diseases.

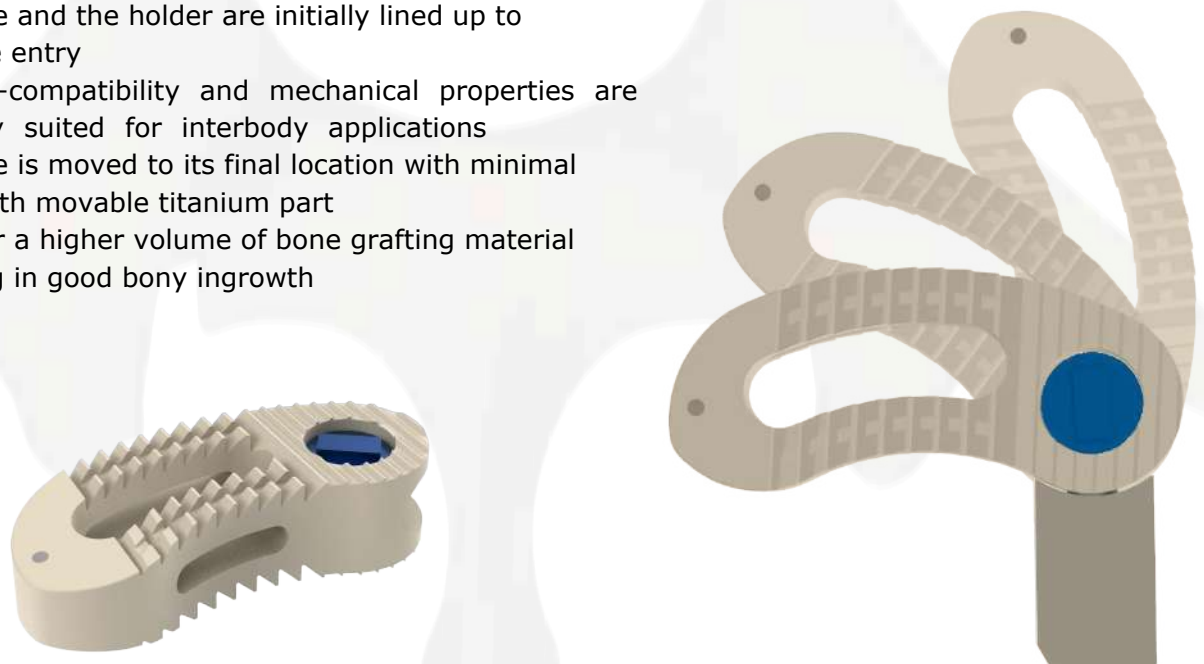
**Mikron Tureis TLIF Peek Cage** is performed to remove a portion of disc that is the source of back or leg pain. Mikron Tureis TLIF Peek Cage is inserted in to the disc space to aid in supporting areas between the vertebrae where the disc has been removed.

## Implant Overview

**Mikron Tureis TLIF Peek Cage** are manufactured from PEEK material which is compatible with MRI and does not allow any lesional problems. Through its toothed surface feature which facilitates a strong fixation by superior and inferior area. Through its grafting spaces, it's possible to reach appropriate fusion by grafting technique. The device may be used with synthetic bone

The feature and benefits of the **Mikron Tureis TLIF Peek Cage** system are following,

- Tantalum marker
- The cage and the holder are initially lined up to facilitate entry
- The bio-compatibility and mechanical properties are perfectly suited for interbody applications
- The cage is moved to its final location with minimal effort with movable titanium part
- Allow for a higher volume of bone grafting material resulting in good bony ingrowth



**Figure 1:** Mikron Tureis TLIF Peek Cage



## Surgical Technique

### 1. Preparation and Approach

The patient is positioned in the prone position on a lumbar frame that promotes suitable exposure and restores anatomical lordotic alignment. Radiographic equipment may be assist in conforming the affected disc level for intra operative positioning of the implant standard posterior incision and posterior approach are performed under general anesthesia.



**Figure 2: Prone Position**

### 2. Endplate Preparation

The lower facet of the cranial vertebra and upper facet of the caudal vertebra are removed on one side with the osteotome. The shavers are used to start the progressive restoration of disc height and facilitate disc removal. Discectomy is completed using rongers. Remove the disc using **MSPT14-18 Disc Shavers** from 7mm to 12mm through the window until only the anterior and lateral annuli remain. The spreader or curettes are used progressively on the right and left sides until desired disc space opening is achieved. The discectomy is completed until enough space open.

The disc shavers are connected to a **MSPT12 T-Handle** via the quick-release system. For better orientation, the handle ends are aligned in the same way as the end of the paddle shavers. **MSPT13 I-Handle** is available in the set to allow for fast exchange of successive paddle shavers during the procedure.

**Figure:3 Removing the disc**



The vertebral plates should be prepared and cleaned carefully with a **MSPT05 Curette Straight**, **MSPT06 Curette Left** and **MSPT07 Curette Right**.

When the discectomy is complete, remove the superficial layers of the cartilaginous endplate to expose bleeding bone. This can be accomplished with a **MSPT08 Rasp**.

**Figure 4: MSPT05 Curette Straight, MSPT06 Curette Straight Left, MSPT07 Curette Right**



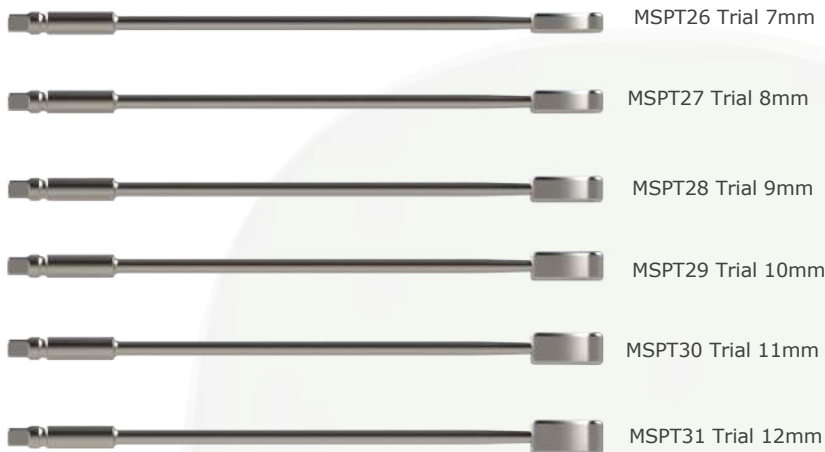
### **Distraction**

This may be accomplished through several techniques pedicle screw distraction and distraction with positioning device or bony element. Surgeon may use the pedicle screws distractor to distract the disc space.

### **Trials spacer**

Mikron trials can be connected to them **MSPT12 T-Handle** or **MSPT13 I-Handle** and can be used before insertion to check the implant size and disc height required with insert the trial in to the disc space. Trials start from 7mm to 12mm however 13mm is available if required.

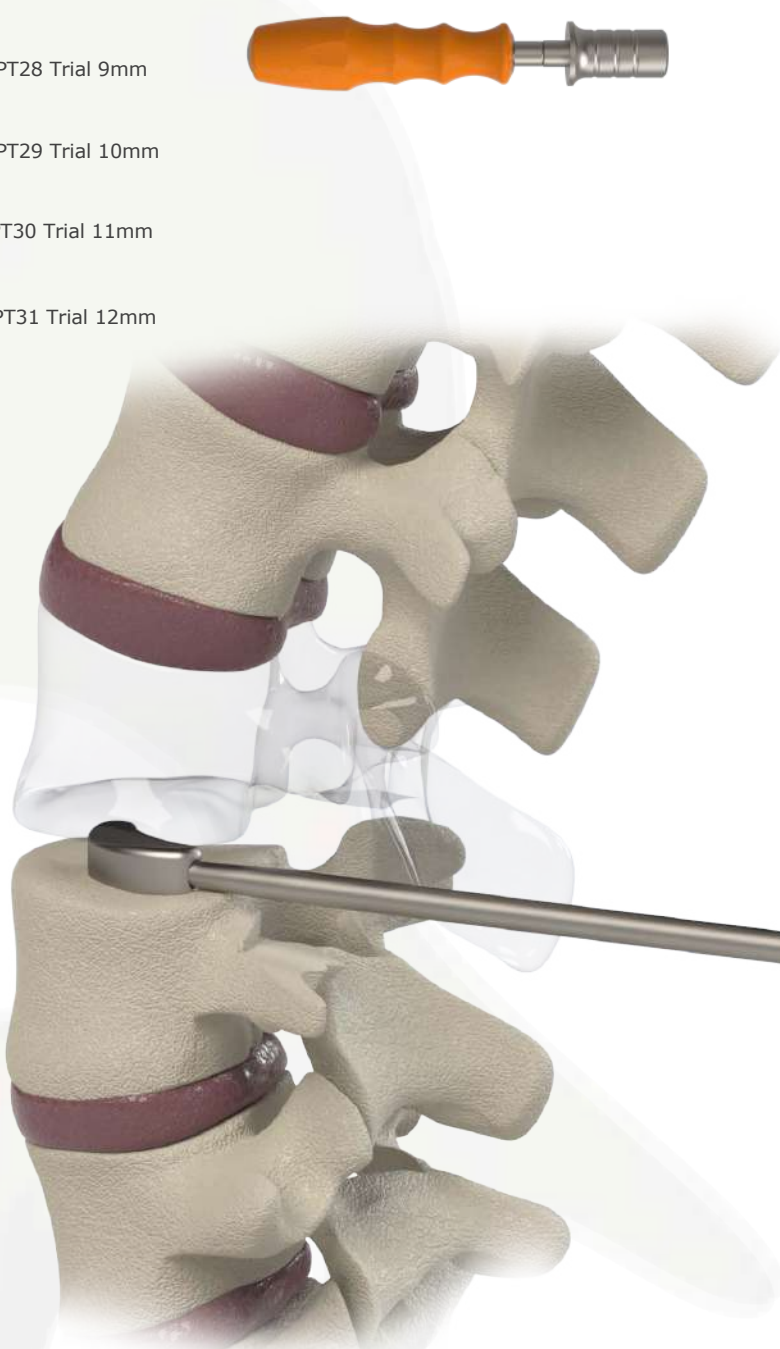
**Figure 5: MSPT08 Rasp**



**Figure 6: MSPT26-31 Trials**

### 3. Implant Size Selection

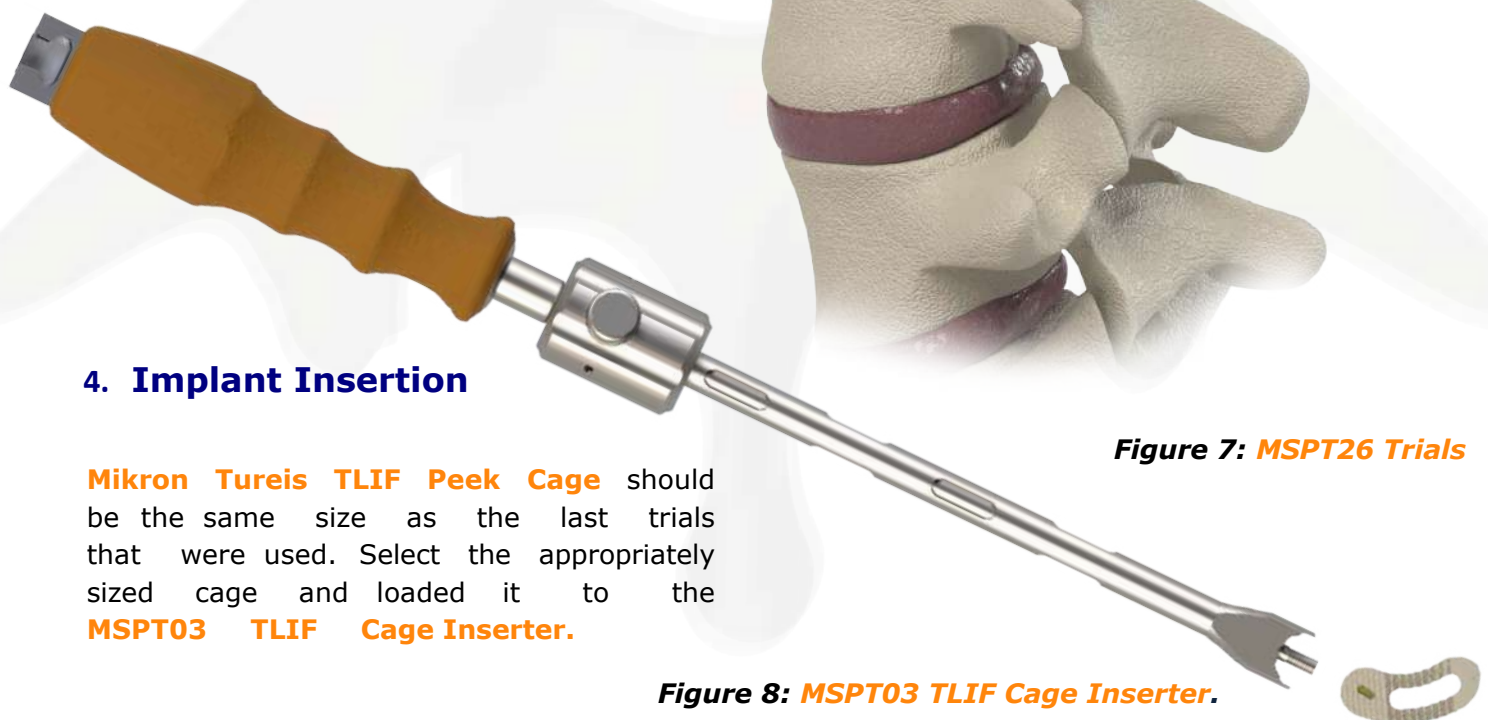
The disc space height is then sized using a series of trials the trials size is serially increased until appropriate fit within the disc space is achieved. The trial should fit snugly with in the disc space with distraction released but care must taken to not oversize the implant.



**Figure 7: MSPT26 Trials**

### 4. Implant Insertion

**Mikron Tureis TLIF Peek Cage** should be the same size as the last trials that were used. Select the appropriately sized cage and loaded it to the **MSPT03 TLIF Cage Inserter**.



**Figure 8: MSPT03 TLIF Cage Inserter.**



The implant is inserted into the disc space ideally in a midline anterior position. The insertion handle is specifically designed to allow a surgeon to insert the implant into the disc space with a fixed engagement between the two component to permit a controlled positioning of implant in the anterior portion of the intervertebral space.

The implant can be insert in to three different manual techniques. The implant inserter is then released from the cage.

**Figure 9: Implant insert**

Insert the cage carefully and gradually into the disc space by using **MSPT04 TLIF Cage Pusher**. **MSPT10 Hammer** may be used to gently secure the implant to final position. the fluoroscopy may be useful in determining the appropriate trajectory for insertion and appropriate final position.

**Figure 10: MSPT04 TLIF Cage Pusher and MSPT10 Hammer**





## 5. Final Construct

After confirming position of the implant by using fluoroscopy remove to all instruments.



**Figure 11: View of the positioned cage**

## 6. Optional Techniques

### Using the Bone graft

The cage may be filled with bone or a bone substitute.

For obtaining bone graft from the iliac crest is recommended.



## Instrument Overview



**MSPT03**

***Tlif Cage Inserter***



**MSPT04**

***Tlif Cage Pusher***



**MSPT05**

***Curette Straight***



**MSPT06**

***Curette Left***



**MSPT07**

***Curette Right***



**MSPT08**

***Tlif Rasp***



**MSPT10**

***Mallet Small***



**MSPT11** *Sliding Mallet*



**MSPT12** *T Handle*



**MSPT13** *I Handle*



**MSPT14** *Disc Shaver 7 mm*  
**MSPT15** *Disc Shaver 8 mm*  
**MSPT16** *Disc Shaver 9 mm*  
**MSPT17** *Disc Shaver 10 mm*  
**MSPT18** *Disc Shaver 11 mm*  
**MSPT19** *Disc Shaver 12 mm*



**MSPT26** *Tlif Trial 7 mm*  
**MSPT27** *Tlif Trial 8 mm*  
**MSPT28** *Tlif Trial 9 mm*  
**MSPT29** *Tlif Trial 10 mm*  
**MSPT30** *Tlif Trial 11 mm*  
**MSPT31** *Tlif Trial 12 mm*



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