

# Aesculap® T-Space®

Transforaminal Lumbar Interbody Fusion System



Aesculap Spine

# T-Space<sup>®</sup>

Transforaminal Lumbar Interbody Fusion System



## Surgical Technique – L5/S1

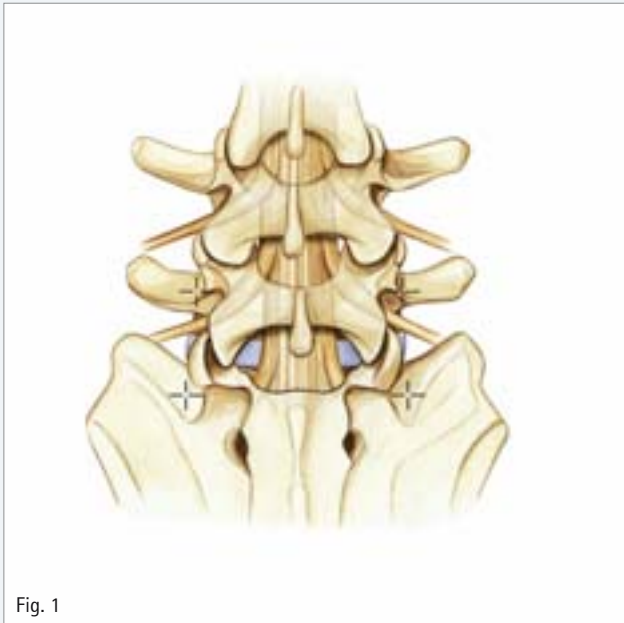


Fig. 1



Fig. 2

- *Osteotome FJ658R*
- *Distraction device FG288R*

### Midline approach (Fig. 1)

- A midline incision is performed and the muscles are dissected subperiosteal from the spinal processes. The subperiosteal dissection is done on both sides up to the level of the transverse processes of the planned fusion and to the pars lateralis ossis sacri.

#### Note:

The transforaminal lumbar interbody fusion (TLIF) technique reach its limitations at the level L5/S1. A midline incision is performed to enable an intra-operative change to posterior lumbar interbody fusion (PLIF) technique, if necessary.

### Resection of the facet joint (Fig. 2)

- For the transforaminal approach to the disc the facet joint is resected on the side targeted for the implant insertion. The inferior articular process of the facet joint is resected first, then the subjacent superior articular process is resected.

#### Tip:

Insertion of the compression distraction device of the SOCON Spinal System (FG288R) to eliminate the telescoping effect. This enables an easier resection of the facet joint. Alternatively the S<sup>4</sup> distraction forceps can be used when the screws are already inserted.

#### Note:

Excessive resection may destroy the pedicle of S1.

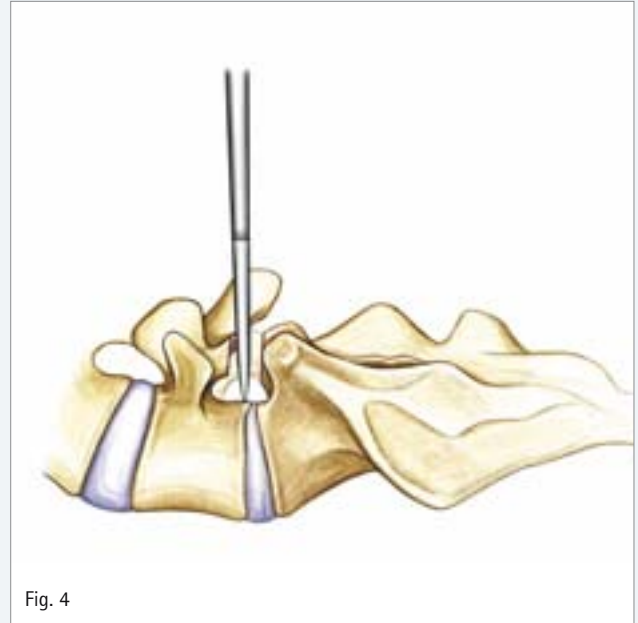
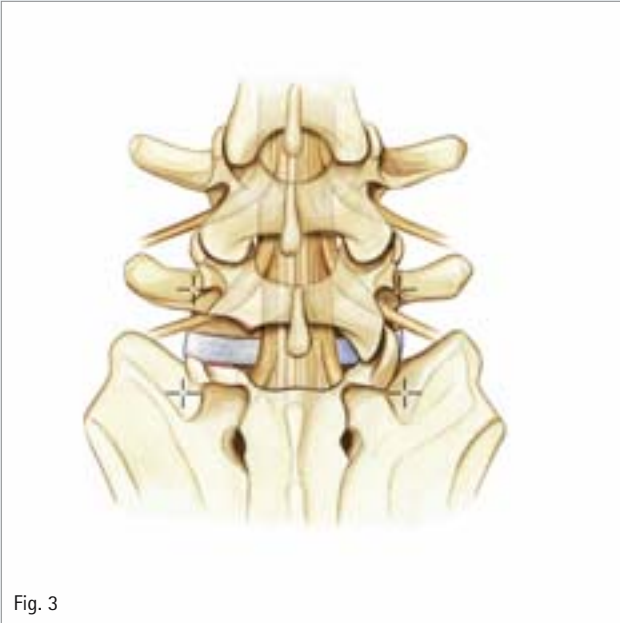


FJ658R



FG288R

## Surgical Technique – L5/S1



■ *Osteotome FJ658R*

### Exposure after resection (Fig. 3)

- The nerve root is now visible, which is close about the pedicle of the cranial vertebral body and which slightly covers the lateral part of the disc.
- Caudally the beginning of the next nerve root is visible in caudal direction and medially the latero-cranial part of the dural sac. After localization of these neural structures, the vessels of the neuroforamen are carefully coagulated bipolar.
- The dural sac is carefully mobilized with the help of an dissector.

### Opening of the disc and removal of posterior lip (Fig. 4)

- Where appropriate, the posterior lip of the superior and inferior endplate is resected to facilitate the insertion of the spacer. Either an osteotome or a high speed bur can be used
- To open the disc a small window is cut into the annulus.
- Rongeurs are used to remove the opened annulus.

#### Note:

The integrity of the endplates must be preserved.



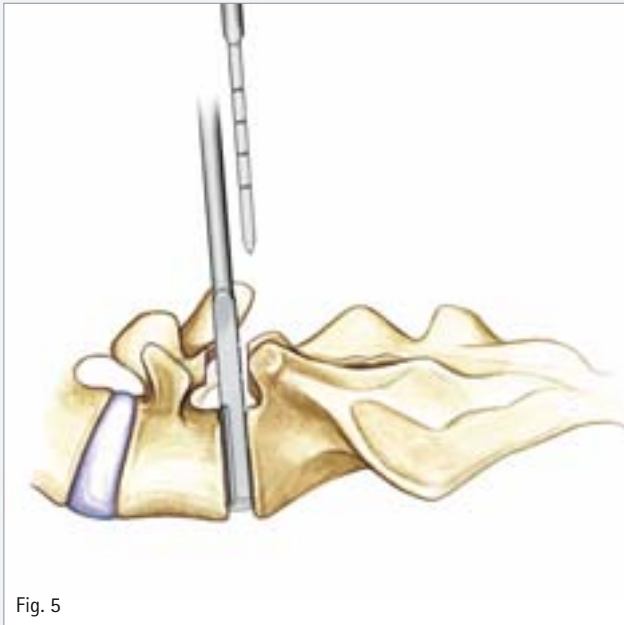


Fig. 5

- T-Handle FJ646R
- Distractors FJ647R-FJ657R

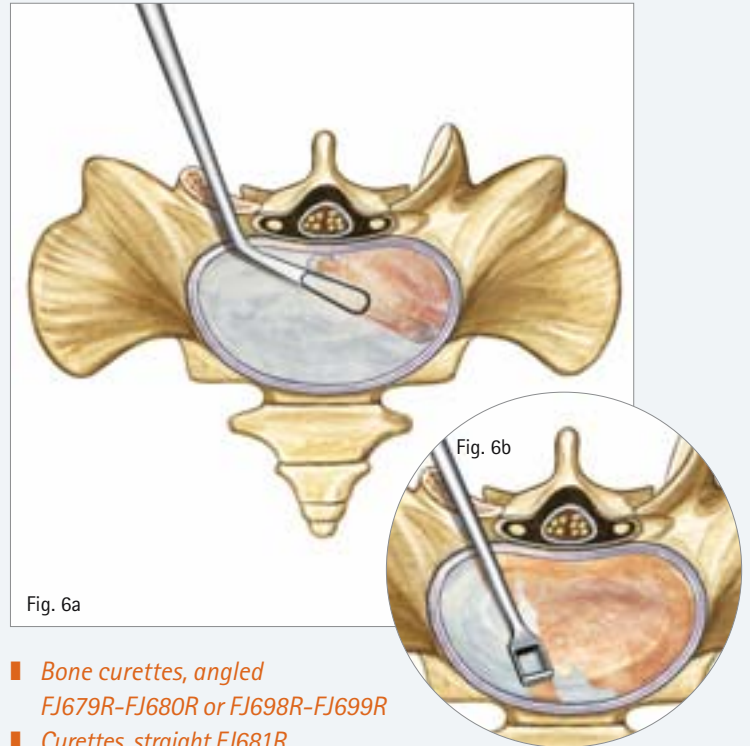


Fig. 6a

- Bone curettes, angled FJ679R-FJ680R or FJ698R-FJ699R
- Curettes, straight FJ681R
- Curettes, angled FJ682R-FJ683R or FJ702R-FJ703R
- Bone rasps, angled FJ685R-FJ686R or FJ704R-FJ705R

### Restoration of the disc height (Fig. 5)

- The desired restoration of the natural disc height can be set using the distractors.
- Starting with the smallest height, the distractor must be inserted horizontally and then rotated clockwise.

#### Tip:

To achieve/hold the distraction the S<sup>4</sup> distraction forceps FW023R or the compression distraction device of the SOCON Spinal System FG288R can also be used.

### Cleaning of the intervertebral space (Fig. 6 a-b)

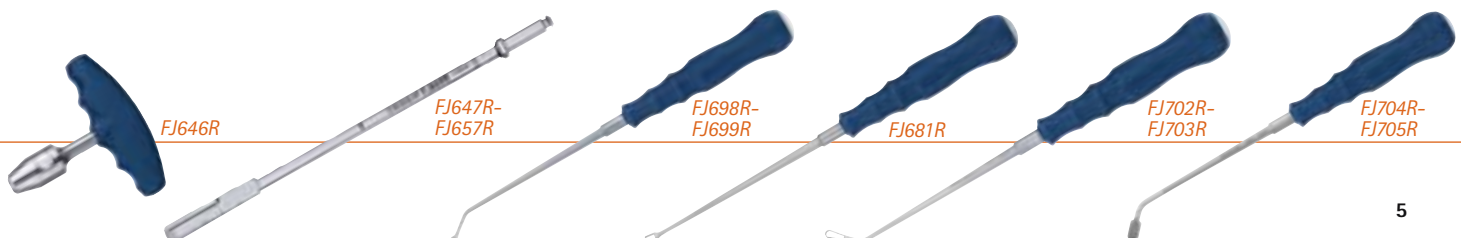
- To facilitate the discectomy additional distraction may be applied at this time.
- The disc space is cleared using various rongeurs, bone curettes and rectangular curettes.
- The right- and left-angled curettes facilitate removal of cartilaginous material in the far lateral disc space.

#### Note:

Careful removal of cartilaginous material is mandatory to cause fusion and utilise fully the implant surface effect.

#### Note:

Excessive preparation of the endplates may weaken the construct and cause subsidence of the interbody device.



# T-Space<sup>®</sup>

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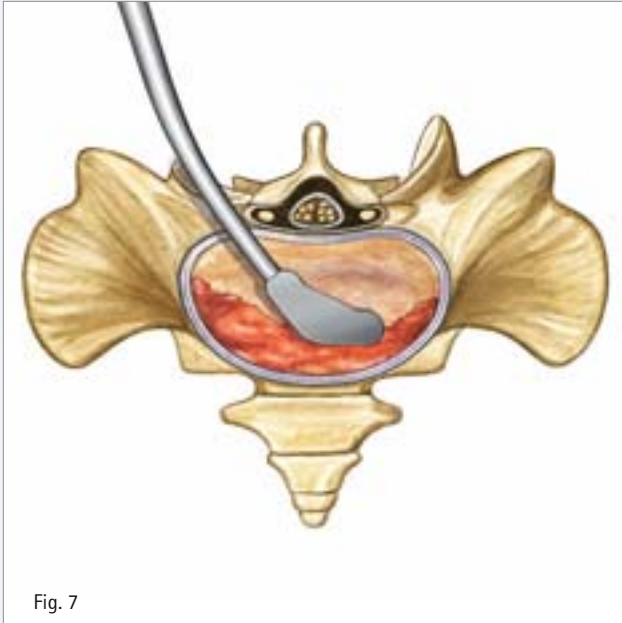


Fig. 7

- Slap hammer FJ666R
- Trial implants FJ667R-FJ677R or FJ619R-FJ629R

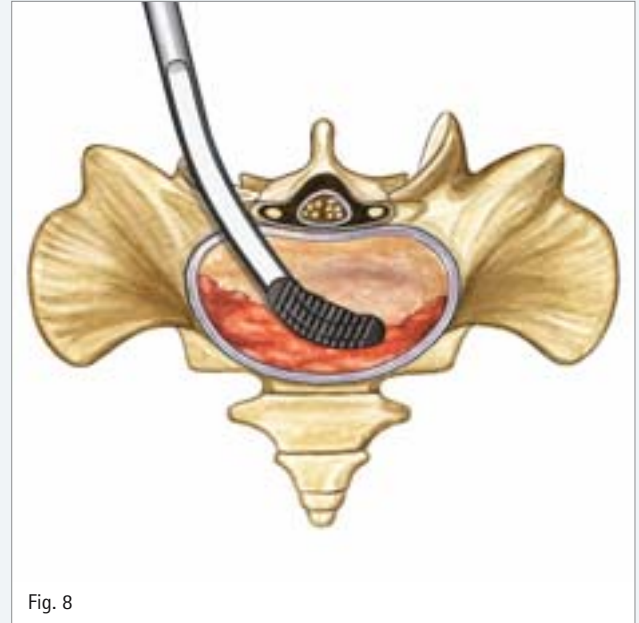


Fig. 8

- T-Space Ti inserter FJ700R / FJ701R
- Insertion guide FJ661R

### Insertion of bone material (Fig. 7)

- Prior to placement of the T-Space it is recommended to fill the anterior and contra-lateral part of the disc space with bone material harvested from the preparation to support a solid interbody fusion. Bone growth into the coating is ensured due to the optimal features of Plasmapore.

### Determination of implant size using trial implants (Fig. 7)

- The appropriately-sized trial is connected to the slap hammer or the T-handle and is inserted into the intervertebral disc space using gentle impaction.
- If the trial implant appears too small or too tight, the next larger or smaller size must be tried until the most secure fit is achieved.

### Implant insertion (Fig. 8)

- Either a straight or a curved inserter is available to insert the T-Space implant. Less impaction is necessary with the curved inserter as the implant draws near to the final position.
- If desired, an insertion guide is available.





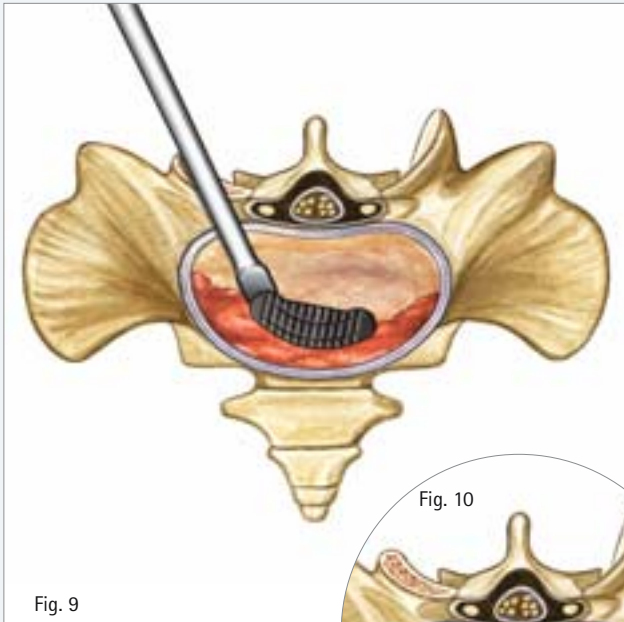


Fig. 9

- *Straight T-Space impactor*  
FJ662R
- *Angled T-Space impactor*  
FJ663R



Fig. 10



Fig. 11

- *S<sup>4</sup> Spinal System*

### Final implant positioning (Fig. 9)

- Using the straight and angled impactor the implant is fully seated.
- It is recommended that T-Space is placed approximately 6 mm from the anterior edge of the vertebral body.

### X-ray control and insertion of bone material (Fig. 10)

- X-ray control to verify the position
- If desired, additional bone graft material should be inserted posterior to the spacer to support a solid fusion. The Plasmapore coating does not require it due to its osteoconductive effect.
- The implant gets jammed by release of distraction as well as by compression with the posterior instrumentation.

### Application of S<sup>4</sup> Spinal System (Fig. 11)

- Insertion of S<sup>4</sup> screws.
- Assembly with rod and set screw.
- Final tightening of the S<sup>4</sup> pedicle screws and removal of the tabs.
- Subsequent segmental compression with posterior instrumentation allows loading of the anterior column and restoration of sagittal alignment.
- ▶ Surgical technique O26702

#### Note:

Order no. FJ630 for a complete T-Space instrument set.

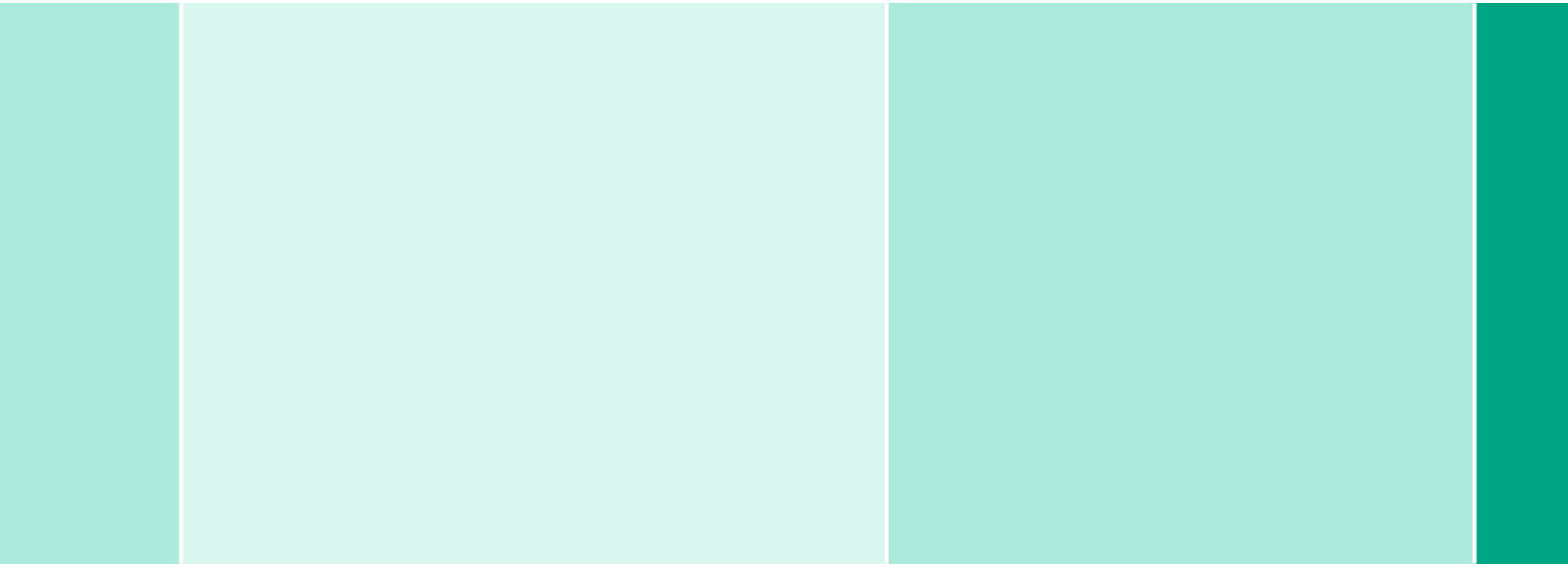
#### Note:

Further information on the T-Space Interbody Fusion System as well as detailed ordering information you will find in brochure no. O29502.



FJ662R

FJ663R



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