SURGICAL TECHNIQUE

Tra-Ti

Cervical Cage

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Tra-Ti
Cervical Cage

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Tra-Ti
Cervical Cage

INTRODUCTION

Tra-Ti Cervical Cage Features

- *Not lesion persistent that produced by peek material compatible with MR*
- *Best fit with anatomic structure*
- *Tantalum marker*
- *Implantable with Smith-Robinson Technic*
- *Strong fixation by superior and inferior area with threaded surface and two titanium pins*

Tra-Ti
Cervical Cage

INTRODUCTION

Indications

-SL anterior cervical intersomatic fusion cages are designed for the treatment of softand hard disc degenerative conditions, in combination with anterior cervical plates. Traumatic disc lesions and revision surgery for pseudarthrosis can also be addressed.

Contraindications

a) Absolute contra indications:

1. Infection or inflammation of the cervical spine
2. Distant infection sites, with potential hematogenous spread to the implant
3. Metastases of the cervical spine
4. Patients with an immature skeleton
5. Patients with neuromuscular diseases, limited available bone at the cervical spine

b) Conditions that increase the risk of failure:

1. Patients with poor compliance
2. Severe osteoporosis: additional posterior cervical fixation may be required
3. Metabolic disorders of bone
4. Osteomalacia
5. Pathological obesity
6. Pregnancy
7. Senility, mental illness, alcoholism or drug abuse
8. Poor health conditions with regard to wound healing (e.g., skin ulceration, terminal diabetes mellitus, alcoholism, drug abuse, or malnutrition)

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SURGICAL TECHNIQUE

1
Patient positioning

Position the patient in a restored physiological lordosis.

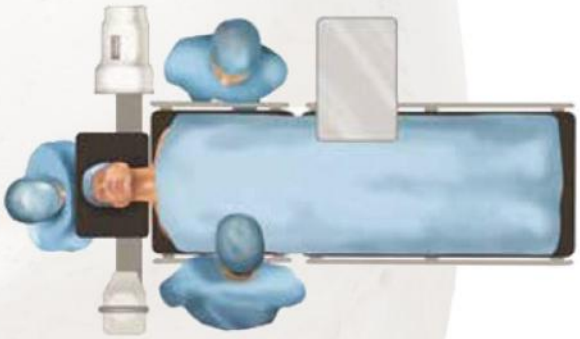

Figure 1a

2
Exposure

Patient positioning is critical to ensure proper orientation and alignment of the device.
The position should be maintained throughout the surgery, and rotation of the head should be prevented.

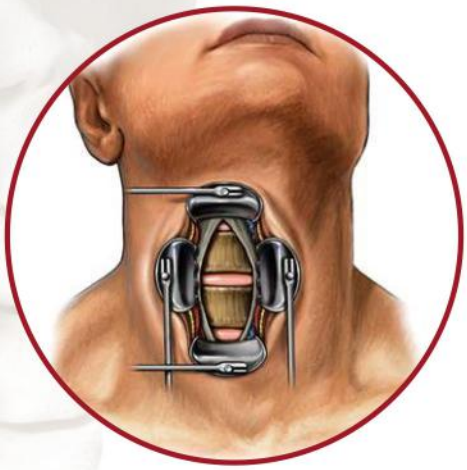

Figure 2a

Tra-Ti
Cervical Cage

SURGICAL TECHNIQUE

3

Caspar Pin Placement

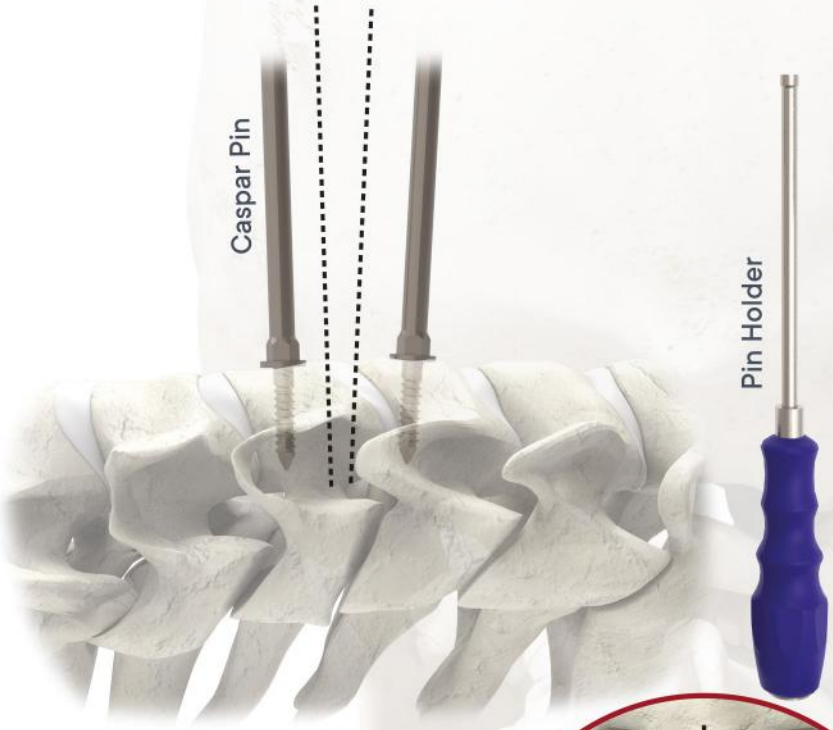

Figure 3a

Insert the Caspar Pin (CPC010) using the Pin Holder (CPC008). It is important to place the pins in the following manner:

- No less than 5 mm from each endplate so as not to interfere with future instrumentation
- Centered on midline in the coronal plane
- Parallel with the vertebral endplates to ensure parallel distraction
- Under fluoroscopy to confirm proper positioning

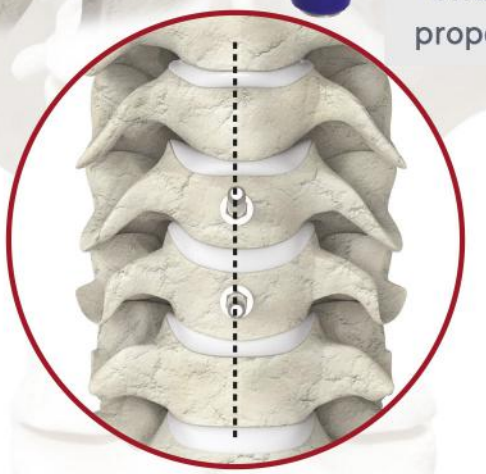

Figure 3b

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SURGICAL TECHNIQUE

4

Caspar Retractor Placement

Rotate the knob on the Caspar Retractor (CPC009) to distract to the desired height for performing the discectomy; ratcheting mechanism maintains height.

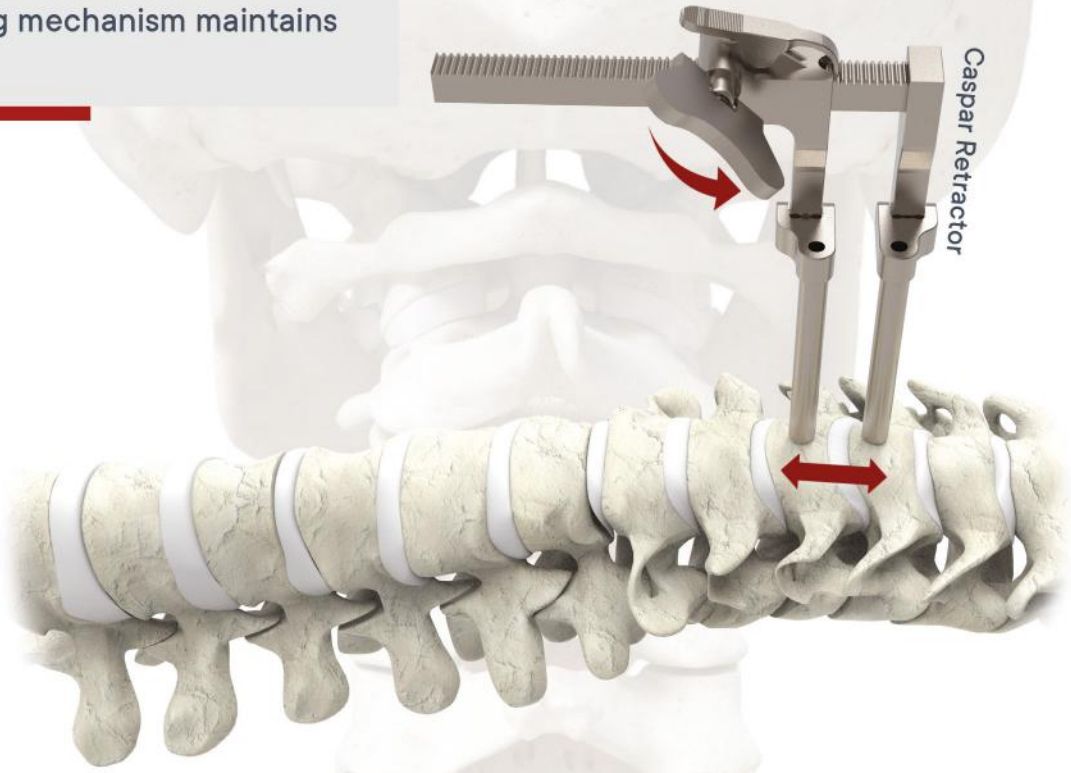

Figure 4a

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Cervical Cage

SURGICAL TECHNIQUE

4

Caspar Retractor Placement

Perform a complete discectomy of the disc space between the uncinate processes and back to the posterior ligament. Take care to decompress the foramen bilaterally and respect the bony endplates. Caspar Retractor (CPC009)

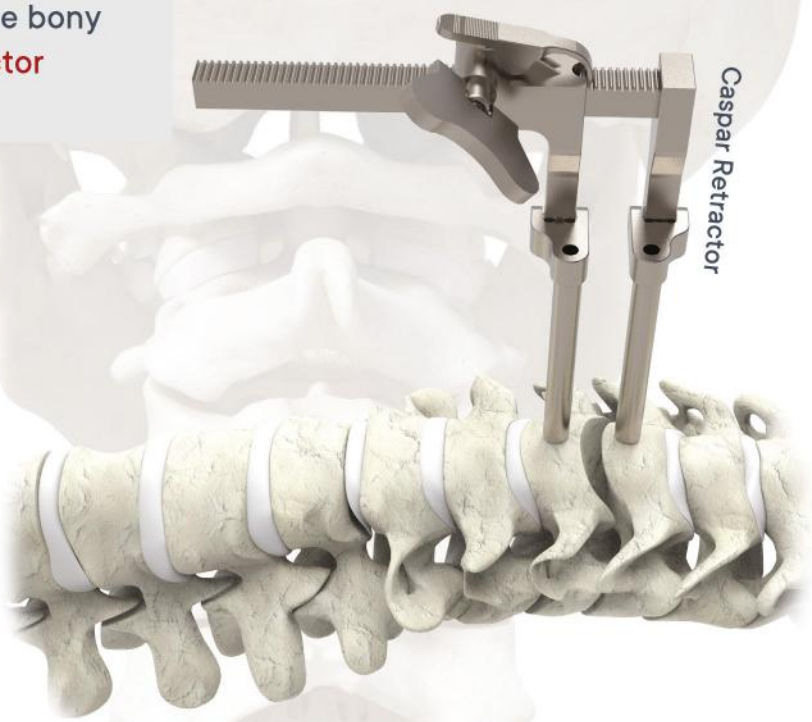

Figure 4a

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Cervical Cage

SURGICAL TECHNIQUE

5

Trialing

Trials, 4 mm (CPC002), 5 mm (CPC003), 6 mm (CPC004), 7 mm (CPC005), 8 mm (CPC006) are placed into the disc space intra-operatively to determine the appropriate implant height and size of footprint. The goal is to select the largest footprint possible and the smallest height necessary. The implant should cover the majority of the vertebral body end plate. Undersized implants lead to increased risk of implant subsidence.

Figure 5a

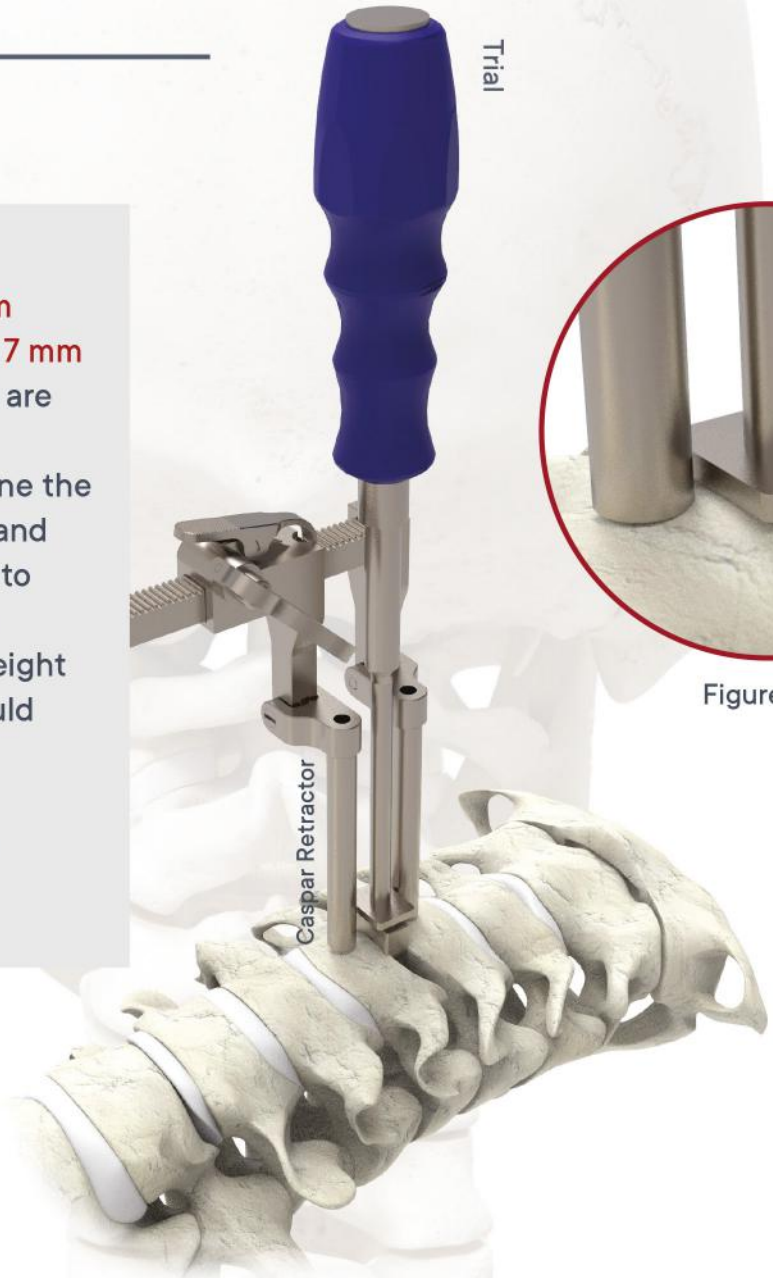

Figure 5b

Tra-Ti
Cervical Cage

SURGICAL TECHNIQUE

6

Implant Insertion

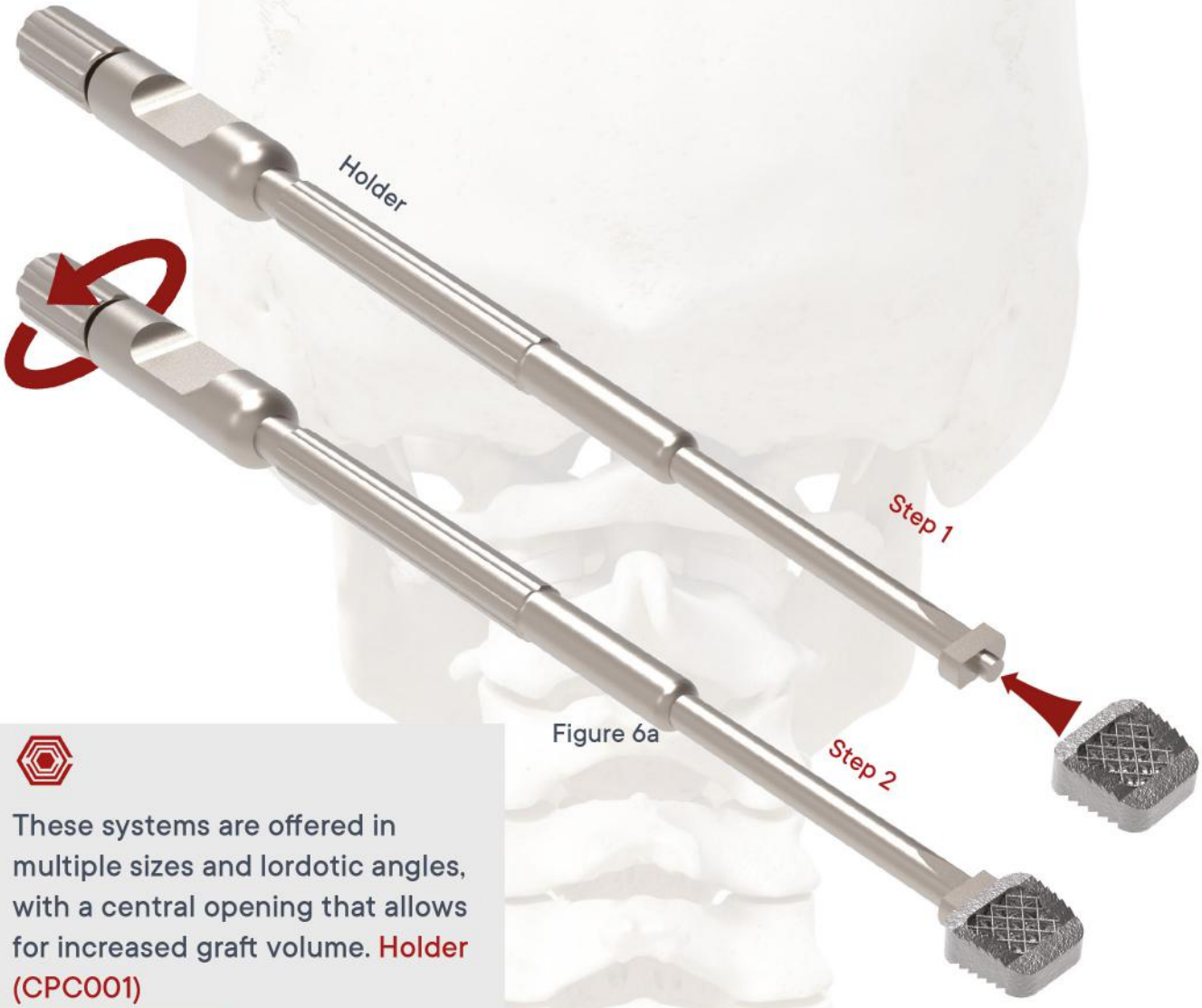

Figure 6a

These systems are offered in multiple sizes and lordotic angles, with a central opening that allows for increased graft volume. Holder (CPC001)

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SURGICAL TECHNIQUE

6

Implant Insertion

Implant is inserted into the disc space under fluoroscopy. The Holder (CPC001) has a preset depth feature to allow the surgeon placed the implant properly into the disc space. Hammer (CPC011), Caspar Retractor (CPC009)

Figure 6b

Figure 6c

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SURGICAL TECHNIQUE

6
Implant Insertion

A lateral x-ray may be used to confirm placement of the implant. Once the implant is positioned appropriately, the Holder (CPC001) can be disengaged.

Figure 6d

7
Removal

If the implant needs to be removed from the patient for any reason, removal of the implant should be done with the appropriate handpiece. Removal of the implant must be done by the responsible doctor.
The responsibility for removal belongs to the doctor.

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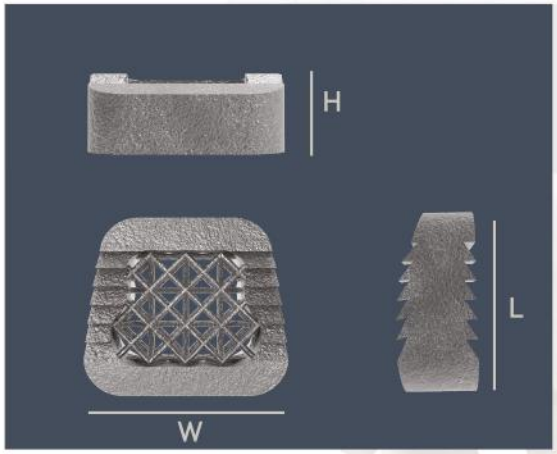
SIZES

Information



Tra-Ti
Cervical Cage

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NM-TTC041414	14	14	4
NM-TTC041416	16	14	4
NM-TTC051214	14	12	5
NM-TTC051216	16	12	5
NM-TTC051414	14	14	5
NM-TTC051416	16	14	5
NM-TTC061214	14	12	6
NM-TTC061216	16	12	6
NM-TTC061414	14	14	6
NM-TTC061416	16	14	6
NM-TTC071214	14	12	7
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NM-TTC071416	16	14	7
NM-TTC081214	14	12	8
NM-TTC081216	16	12	8
NM-TTC081414	14	14	8
NM-TTC081416	16	14	8

Tra-Ti
Cervical Cage

INSTRUMENT CONTAINER

Container

This container is made of wiremesh stainless steel. It has a hight stability, low weight and good sterilization feature.

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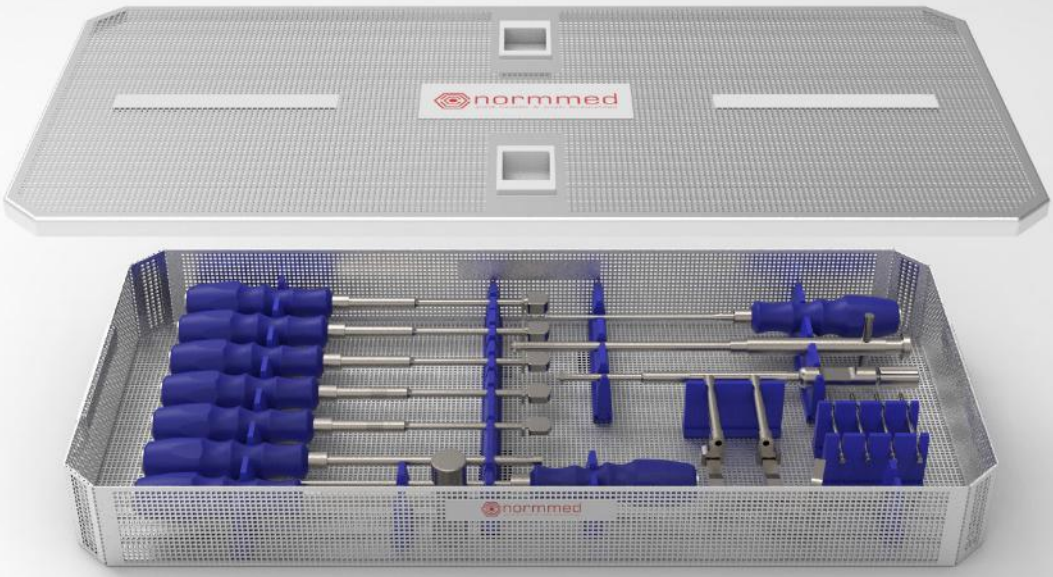
Cervical Cage

INSTRUMENT CONTAINER

Container



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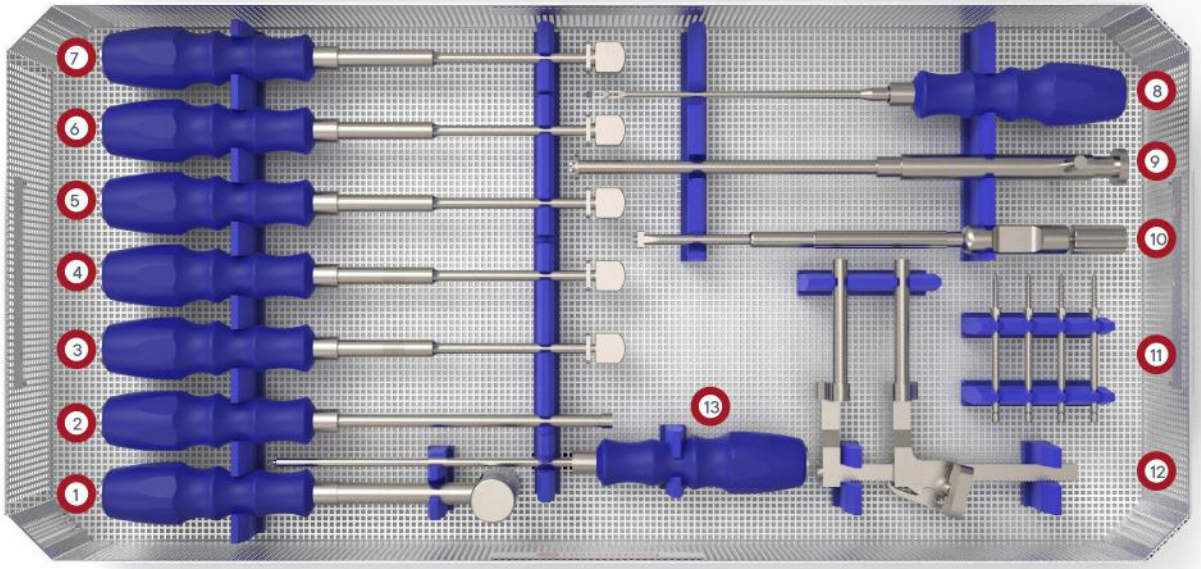
INSTRUMENT TYPES



Set No.	Catalogue No.	Description	Piece
01	CPC011	Hammer	1
02	CPC008	Pin Holder	1
03	CPC002	Trial 4 mm	1

Tra-Ti
Cervical Cage

INSTRUMENT TYPES



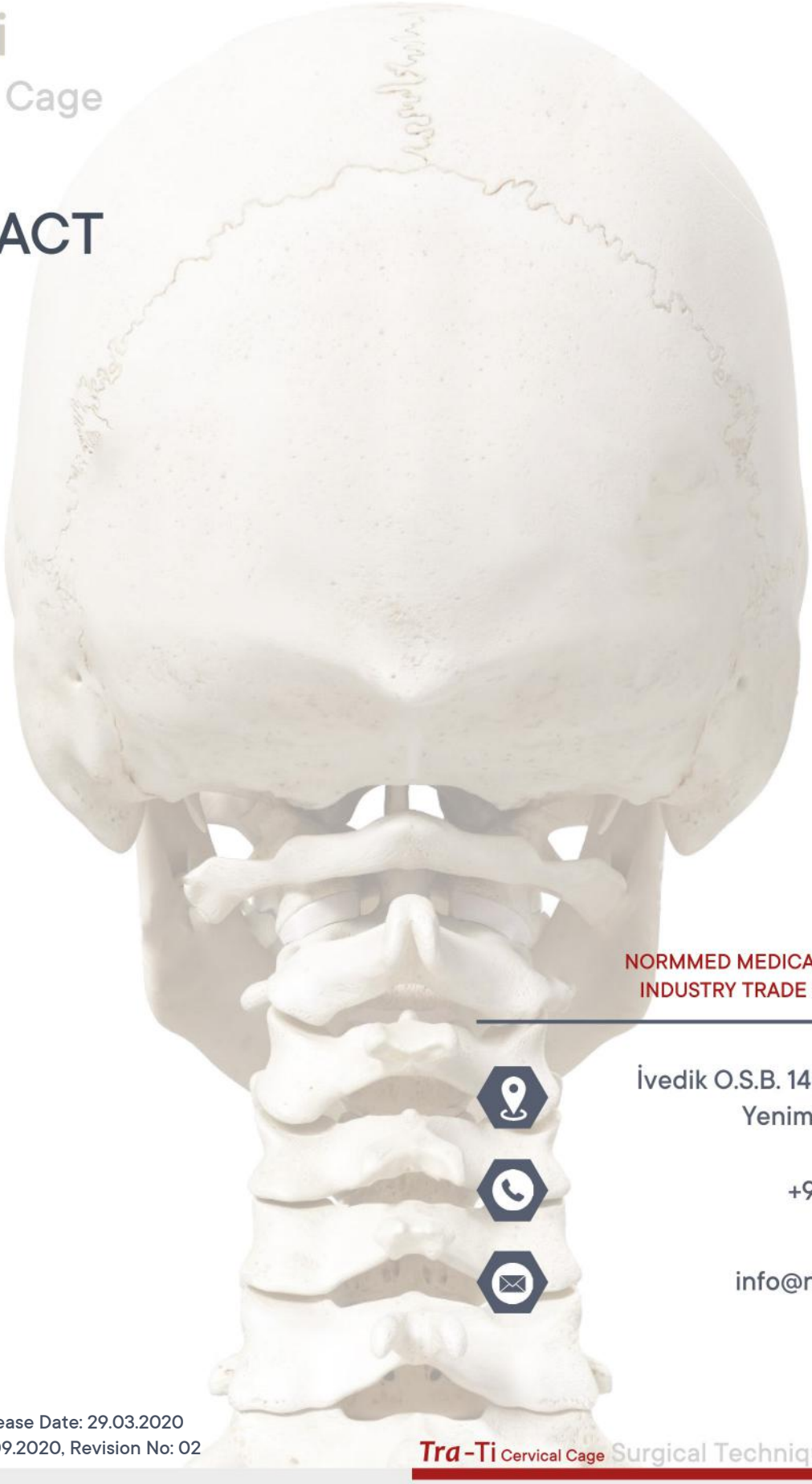




Set No.	Catalogue No.	Description	Piece
04	CPC003	Trial 5 mm	1
05	CPC004	Trial 6 mm	1
06	CPC005	Trial 7 mm	1
07	CPC006	Trial 8 mm	1
08	CPC007	Cervical Reamer	1
09	BCPC001	Polar-b Holder	1
10	CPC001	Holder	1
13	CPC010	Caspar Pin	4
13	CPC009	Caspar Retractor	1
13	CPC011	Cervical Awl	1

Tra-Ti
Cervical Cage

CONTACT



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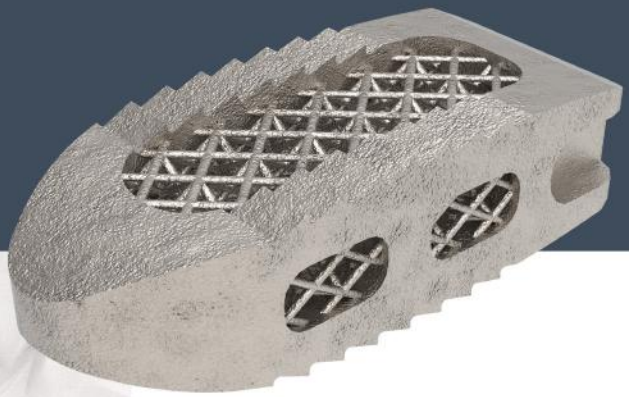
No: F12-CT-23, Release Date: 29.03.2020
Revision Date: 04.09.2020, Revision No: 02

SURGICAL TECHNIQUE

Tra-Ti



PLIF Cage

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Tra-Ti
PLIF Cage

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PLIF Cage
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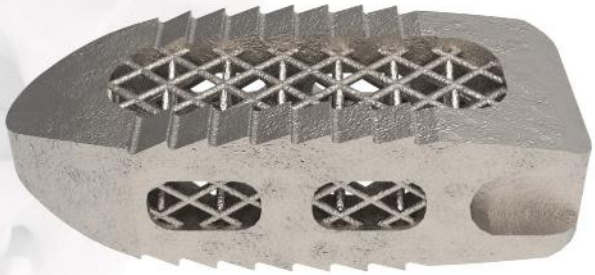


- *Smooth wedge nose to facilitate insertion.*
- *Solid-tipped, precisely angled serrations on the superior and inferior surfaces designed for bidirectional fixation and to maximize surface area for endplate contact with the implant.*
- *Highly porous titanium alloy on top and bottom of implant and all sides of internal graft window.*

Tra-Ti
PLIF Cage
INTRODUCTION

Indications

Indications are lumbar and lumbosacral pathologies in which segmental spondylodesis is indicated, for example:

- *Degenerative disc diseases and spinal instabilities*
- *Revision procedures for post-discectomy syndrome*
- *Pseudarthrosis or failed spondylodesis*
- *Degenerative spondylolisthesis*
- *Isthmic spondylolisthesis*

Contraindications

- *Vertebral body fractures*
- *Spinal tumors*
- *Major spinal instabilities*
- *Primary spinal deformities*

Tra-Ti
PLIF Cage
SURGICAL TECHNIQUE

1
Patient positioning

Position the patient in a restored physiological lordosis. (Figure 1a)

Figure 1a

2
Exposure

The PLIF approach can be performed using standard open or minimally invasive techniques. The laminae and articular processes are exposed laterally to the base of the transverse processes. (Figure 2a)

Figure 2a

Tra-Ti
PLIF Cage
SURGICAL TECHNIQUE

3

PLIF Site Preparation

Lumbar Reamer (LPC008) can be used to complete the resection in areas of reduced access or to clear an area for insertion. (Figure 3a, 3b)

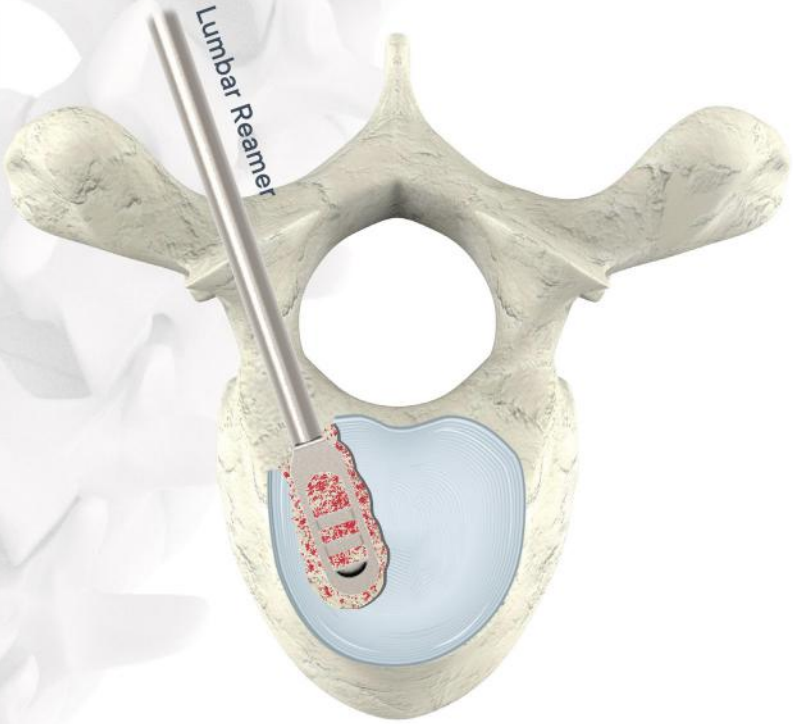


Figure 3a

Figure 3b

Tra-Ti
PLIF Cage
SURGICAL TECHNIQUE

4

Determine Implant Size

Impact an appropriately sized Trial Implant with the etch representing the axial canal positioned cranial/caudal. Hammer (LPC009)

Trial 7 mm (LPC002), Trial 8 mm (LPC003), Trial 9 mm (LPC004), Trial 10 mm (LPC005), Trial 11 mm (LPC006), Trial 12 mm (LPC007)

Figure 4a

Tra-Ti
PLIF Cage
SURGICAL TECHNIQUE

5

Implant Insertion

These parts allow easy grip of the implant. Implant Holder (LPC001)

Figure 5a

Figure 5b

Tra-Ti
PLIF Cage
SURGICAL TECHNIQUE

5

Implant Insertion

These systems are offered in multiple sizes and lordotic angles, with a central opening that allows for increased graft volume. Implant Holder (LPC001), Hammer (LPC009)

Figure 5c

Tra-Ti
PLIF Cage
SURGICAL TECHNIQUE

5

Final Position

Once inserted, the posterior end of the cage should lie between 2mm-4mm anterior to the posterior vertebral body wall. Implant Holder (LPC001) is then release.
(Figure 5c)

Figure 4c

6

Removal

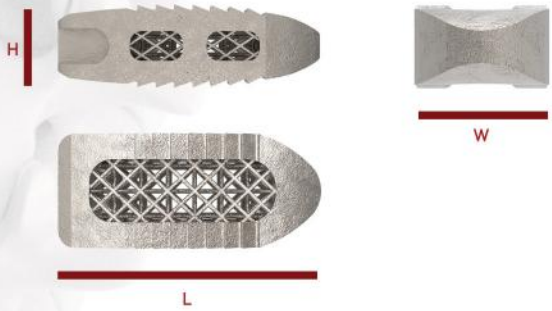
For removal step, Alligator-Exp Extractor (ELPC002) is placed behind Alligator-Exp implant. Retracts by sliding impact.
(Figure 6a)

Tra-Ti
PLIF Cage

SIZES OF IMPLANTS

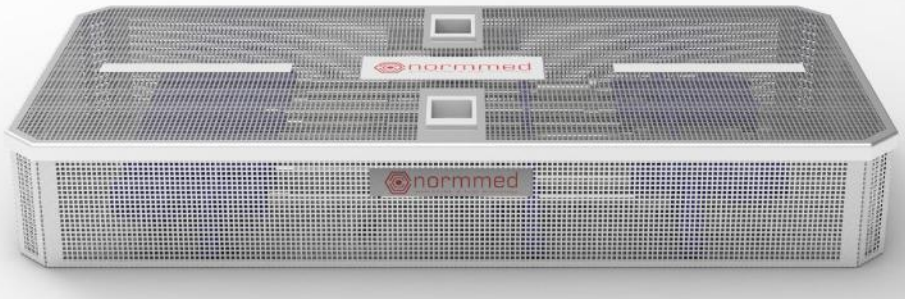
Tra-Ti PLIF Cage

Catalogue No.	Width	Length	Height
NM-TTP2407	10 mm	24 mm	7 mm
NM-TTP2408	10 mm	24 mm	8 mm
NM-TTP2409	10 mm	24 mm	9 mm
NM-TTP2410	10 mm	24 mm	10 mm
NM-TTP2411	10 mm	24 mm	11 mm
NM-TTP2412	10 mm	24 mm	12 mm
NM-TTP2413	10 mm	24 mm	13 mm
NM-TTP2807	10 mm	28 mm	7 mm
NM-TTP2808	10 mm	28 mm	8 mm
NM-TTP2809	10 mm	28 mm	9 mm
NM-TTP2810	10 mm	28 mm	10 mm
NM-TTP2811	10 mm	28 mm	11 mm
NM-TTP2812	10 mm	28 mm	12 mm
NM-TTP2813	10 mm	28 mm	13 mm
NM-TTP3207	10 mm	32 mm	7 mm
NM-TTP3208	10 mm	32 mm	8 mm
NM-TTP3209	10 mm	32 mm	9 mm
NM-TTP3210	10 mm	32 mm	10 mm
NM-TTP3211	10 mm	32 mm	11 mm
NM-TTP3212	10 mm	32 mm	12 mm
NM-TTP3213	10 mm	32 mm	13 mm



Tra-Ti
PLIF Cage
INSTRUMENT CONTAINER

This container is made of wiremesh stainless steel. It has a hight stability, low weight and good sterilization feature.



Container

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INSTRUMENT CONTAINER

This container is made of wiremesh stainless steel. It has a hight stability, low weight and good sterilization feature.

Container

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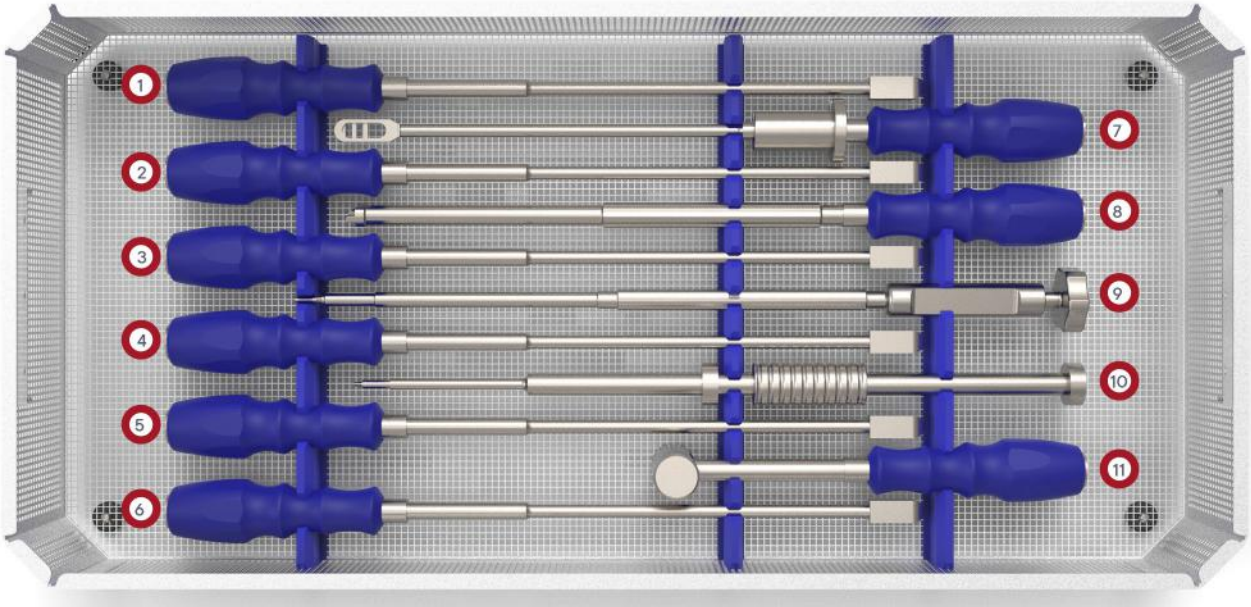
INSTRUMENT TYPES



Set No.	Catalogue No.	Description	Piece
01	LPC002	7 mm Trial	1
02	LPC003	8 mm Trial	1
03	LPC004	9 mm Trial	1

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PLIF Cage

INSTRUMENT TYPES








Set No.	Catalogue No.	Description	Piece
04	LPC005	10 mm Trial	1
05	LPC006	11 mm Trial	1
06	LPC007	12 mm Trial	1
07	LPC008	Lumbar Reamer	1
08	LPC001	Implant Holder	1
09	ELPC001	Alligator-Exp Holder	1
10	ELPC002	Alligator-Exp Extractor	1
11	LPC009	Hammer	1

Tra-Ti
PLIF Cage
CONTACT

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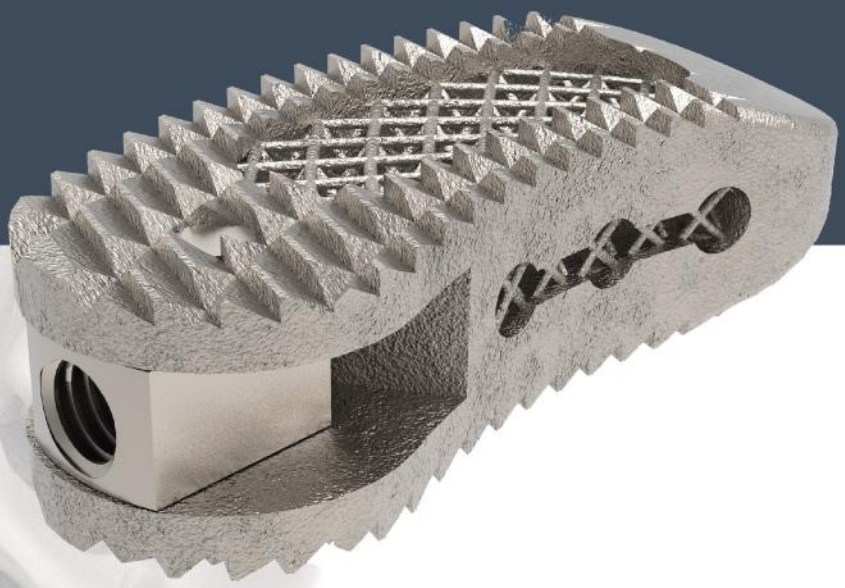
No: F12-CT-24, Release Date: 10.02.2020
Revision Date: 04.09.2020, Revision No: 02

SURGICAL TECHNIQUE

Tra-Ti

TLIF Cage



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TLIF Cage

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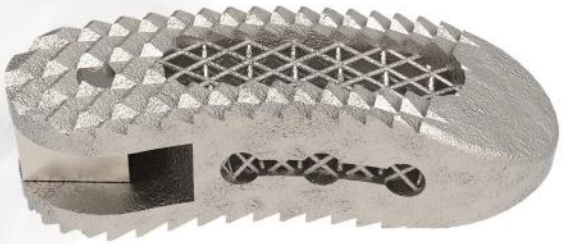

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Tra-Ti
TLIF Cage

INTRODUCTION

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Contraindications

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- *Spinal tumors*
- *Major spinal instabilities*
- *Primary spinal deformities*

Tra-Ti
TLIF Cage

SURGICAL TECHNIQUE

1
Patient positioning

Position the patient in a restored physiological lordosis. (Figure 1a)

Figure 1a

2
Exposure

The TLIF approach can be performed using standard open or minimally invasive techniques. The laminae and articular processes are exposed laterally to the base of the transverse processes.

Figure 2a

Tra-Ti
TLIF Cage

SURGICAL TECHNIQUE

3

TLIF Site Preparation

Angled curettes can be used to complete the resection in areas of reduced access or to clear an area for insertion. (Figure 3a)

Figure 3a

Straight Curette (NMBC003), Left Curette (NMBC004), Right Curette (NMBC00), Rasp (NMBC012)

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TLIF Cage

SURGICAL TECHNIQUE

4
Trial Insertion

Impact an appropriately sized Trial Implant (NMBC009) with the etch representing the axial canal positioned cranial/caudal. Hammer (NMBC013)

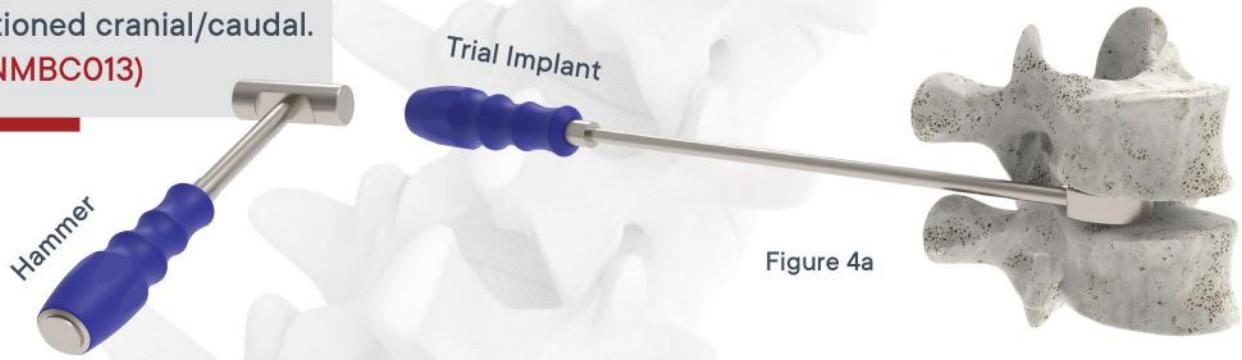

Figure 4a

5
Implant Holder

These parts allow easy grip of the implant. Implant Holder (NMBC001)

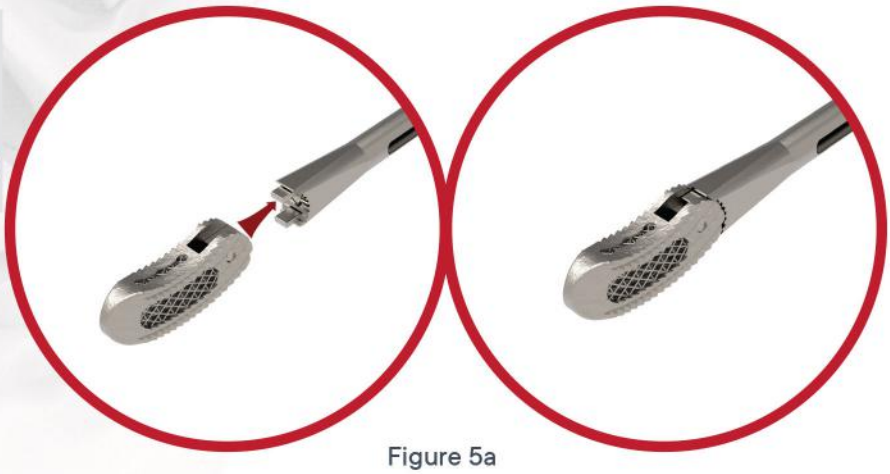

Figure 5a

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SURGICAL TECHNIQUE

6

Implant Insertion

STEP 1

Be sure to fix it firmly. (Figure 6a)

Figure 6a

One or one and a half turn on clockwise to fix the implant.
Implant Holder (NMBC001)

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TLIF Cage

SURGICAL TECHNIQUE

6

Implant Insertion

STEP 2

Figure 6b

Position the implant in the correct direction. (Figure 6b)

STEP 3

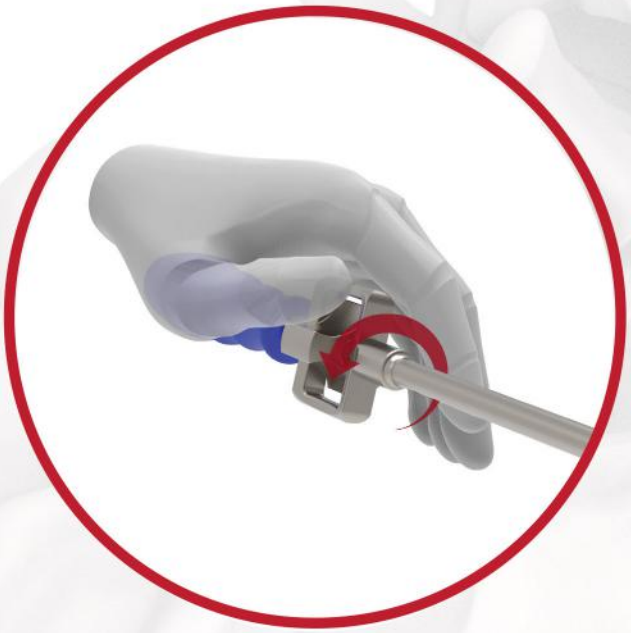

Figure 6c

Turn one or a half turn counter-clockwise to loosen the implant

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TLIF Cage

SURGICAL TECHNIQUE

7

Implant Position

Figure 7a

Continue to impact gently and progressively into the disc space until the implant reaches desired positioning. At this position, the implant is designed to rotate on the rail as the leading edge contacts the ventral annulus. (Figure 7a)

NOTE:

When deemed medically necessary, for intraoperative rescue, use a Implant Holder (NMBC001) to remove.

8

Removal

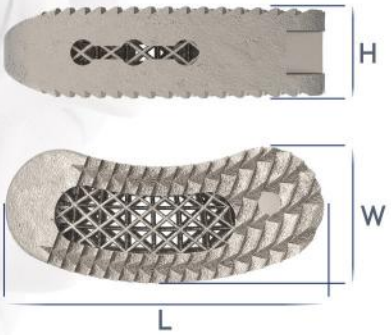
If the implant needs to be removed from the patient for any reason, removal of the implant should be done with the appropriate handpiece. Removal of the implant must be done by the responsible doctor.
The responsibility for removal belongs to the doctor.

Tra-Ti
TLIF Cage

SIZES OF IMPLANTS

Tra-Ti TLIF Cage

Catalogue No.	Width	Length	Height
NM-TTT2407	10 mm	24 mm	7 mm
NM-TTT2408	10 mm	24 mm	8 mm
NM-TTT2409	10 mm	24 mm	9 mm
NM-TTT2410	10 mm	24 mm	10 mm
NM-TTT2411	10 mm	24 mm	11 mm
NM-TTT2412	10 mm	24 mm	12 mm
NM-TTT2413	10 mm	24 mm	13 mm
NM-TTT2807	10 mm	28 mm	7 mm
NM-TTT2808	10 mm	28 mm	8 mm
NM-TTT2809	10 mm	28 mm	9 mm
NM-TTT2810	10 mm	28 mm	10 mm
NM-TTT2811	10 mm	28 mm	11 mm
NM-TTT2812	10 mm	28 mm	12 mm
NM-TTT2813	10 mm	28 mm	13 mm
NM-TTT3207	10 mm	32 mm	7 mm
NM-TTT3208	10 mm	32 mm	8 mm
NM-TTT3209	10 mm	32 mm	9 mm
NM-TTT3210	10 mm	32 mm	10 mm
NM-TTT3211	10 mm	32 mm	11 mm
NM-TTT3212	10 mm	32 mm	12 mm
NM-TTT3213	10 mm	32 mm	13 mm

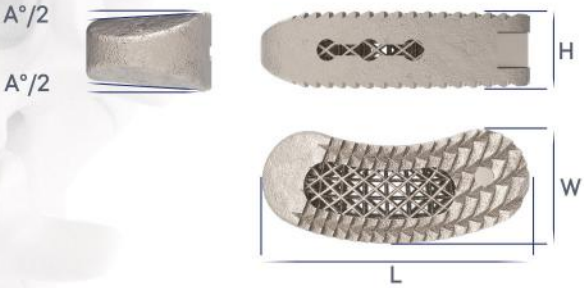


Tra-Ti
TLIF Cage

SIZES OF IMPLANTS

Tra-Ti TLIF Cage

Catalogue No.	Width	Length	Height	Angle
NM-TTTA24074	10 mm	24 mm	7 mm	4°
NM-TTTA24084	10 mm	24 mm	8 mm	4°
NM-TTTA24094	10 mm	24 mm	9 mm	4°
NM-TTTA24104	10 mm	24 mm	10 mm	4°
NM-TTTA24114	10 mm	24 mm	11 mm	4°
NM-TTTA24124	10 mm	24 mm	12 mm	4°
NM-TTTA24134	10 mm	24 mm	13 mm	4°
NM-TTTA24088	10 mm	24 mm	8 mm	8°
NM-TTTA24098	10 mm	24 mm	9 mm	8°
NM-TTTA24108	10 mm	24 mm	10 mm	8°
NM-TTTA24118	10 mm	24 mm	11 mm	8°
NM-TTTA24128	10 mm	24 mm	12 mm	8°
NM-TTTA24138	10 mm	24 mm	13 mm	8°
NM-TTTA28074	10 mm	28 mm	7 mm	4°
NM-TTTA28084	10 mm	28 mm	8 mm	4°
NM-TTTA28094	10 mm	28 mm	9 mm	4°
NM-TTTA28104	10 mm	28 mm	10 mm	4°
NM-TTTA28114	10 mm	28 mm	11 mm	4°
NM-TTTA28124	10 mm	28 mm	12 mm	4°
NM-TTTA28134	10 mm	28 mm	13 mm	4°

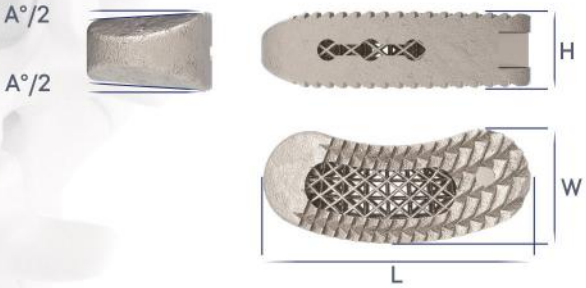


Tra-Ti
TLIF Cage

SIZES OF IMPLANTS

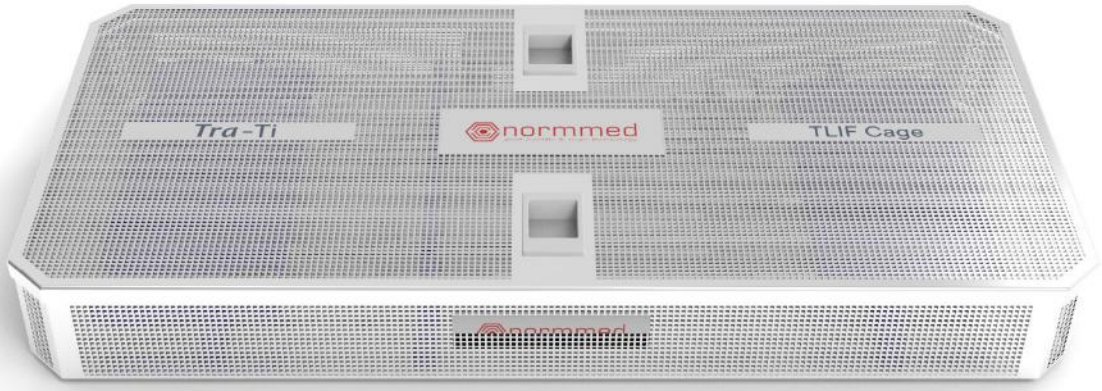
Tra-Ti TLIF Cage

Catalogue No.	Width	Length	Height	Angle
NM-TTTA28088	10 mm	28 mm	8 mm	8°
NM-TTTA28098	10 mm	28 mm	9 mm	8°
NM-TTTA28108	10 mm	28 mm	10 mm	8°
NM-TTTA28118	10 mm	28 mm	11 mm	8°
NM-TTTA28128	10 mm	28 mm	12 mm	8°
NM-TTTA28138	10 mm	28 mm	13 mm	8°
NM-TTTA32074	10 mm	32 mm	7 mm	4°
NM-TTTA32084	10 mm	32 mm	8 mm	4°
NM-TTTA32094	10 mm	32 mm	9 mm	4°
NM-TTTA32104	10 mm	32 mm	10 mm	4°
NM-TTTA32114	10 mm	32 mm	11 mm	4°
NM-TTTA32124	10 mm	32 mm	12 mm	4°
NM-TTTA32134	10 mm	32 mm	13 mm	4°
NM-TTTA32088	10 mm	32 mm	8 mm	8°
NM-TTTA32098	10 mm	32 mm	9 mm	8°
NM-TTTA32108	10 mm	32 mm	10 mm	8°
NM-TTTA32118	10 mm	32 mm	11 mm	8°
NM-TTTA32128	10 mm	32 mm	12 mm	8°
NM-TTTA32138	10 mm	32 mm	13 mm	8°



Tra-Ti
TLIF Cage
INSTRUMENT CONTAINER

This container is made of wiremesh stainless steel. It has a hight stability, low weight and good sterilization feature.

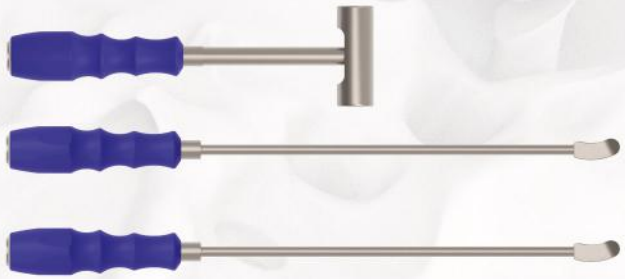


Container

Tra-Ti
TLIF Cage
INSTRUMENT CONTAINER

Container

Tra-Ti
TLIF Cage
INSTRUMENT TYPES



Set No.	Catalogue No.	Description	Piece
01	NMBC013	Hammer	1
02	NMBC011	12 mm Trial	1
03	NMBC010	11 mm Trial	1

Tra-Ti
TLIF Cage
INSTRUMENT TYPES








Set No.	Catalogue No.	Description	Piece
04	NMBC009	10 mm Trial	1
05	NMBC008	9 mm Trial	1
06	NMBC007	8 mm Trial	1
07	NMBC006	7 mm Trial	1
08	NMBC001	Implant Holder	1
09	NMBC004	Left Curette	1
10	NMBC003	Straight Curette	1
11	NMBC005	Right Curette	1

Tra-Ti
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INSTRUMENT TYPES

Set No.	Catalogue No.	Description	Piece
12	NMBC012	Rasp	1
13	NMBC002	Pusher	1

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CONTACT

NORMMED MEDICAL AND MACHINERY
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