

# SecureSpan™ Laminoplasty System

Surgical Technique



Aesculap Spine



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### Indications

The Aesculap SecureSpan Laminoplasty System is intended for use in the lower cervical and upper thoracic spine (C3–T3) after a laminoplasty has been performed. The Aesculap Laminoplasty system is designed to keep the allograft in place in order to prevent the allograft from expulsion or impinging the spinal cord.

### Contraindications

The Aesculap Laminoplasty system is not to be used:

- For screw attachment or fixation to the posterior elements of the lumbar spine
- For single or two-level spondylosis without developmental spinal canal stenosis.
- Under any direct load bearing conditions.

The Aesculap Laminoplasty System is not to be used when there is:

- Focal anterior compression
- Isolated radiculopathy
- Loss of anterior column support resulting from tumor, trauma, or infection

The Aesculap Laminoplasty System must always be used with:

- Structural allograft

### Warning

The testing and regulatory approval of the Aesculap SecureSpan Laminoplasty implant components results from using only Aesculap implants together with Aesculap instruments. Aesculap Implant Systems cannot be held liable for problems encountered where implants or instruments from other manufacturers are used in combination with the Aesculap products.

### Precaution

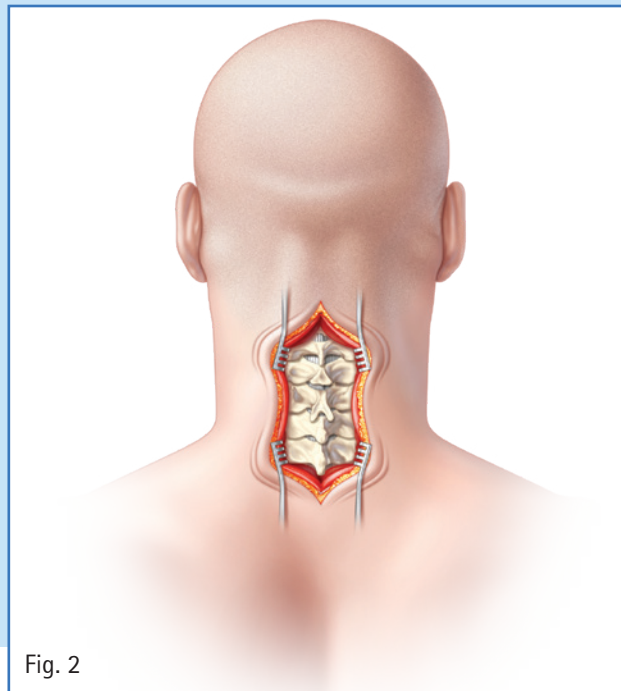
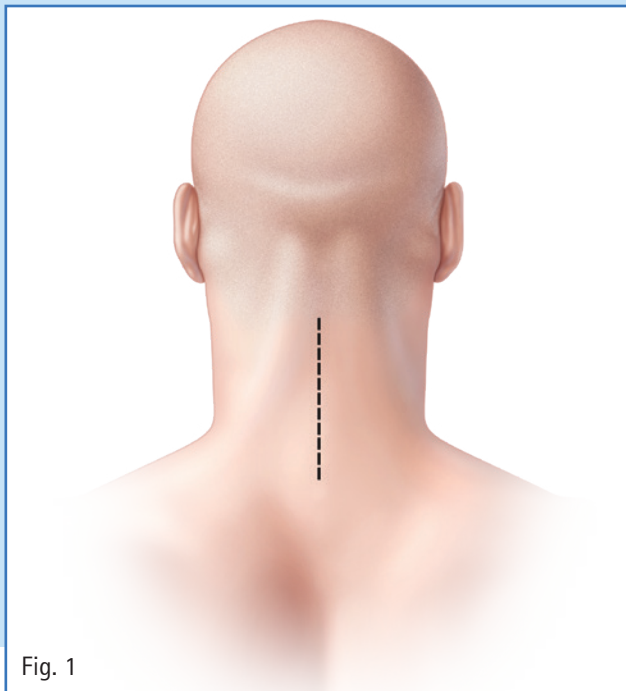
The Laminoplasty Plating System has not been evaluated for safety and compatibility in the MR environment. The Laminoplasty Plating System has not been tested for heating or migration in the MR environment.

### Goal

The main goals of laminoplasty are to widen the central spinal canal and decompress the spinal cord, preserve the protective structures of the spine, and preserve spinal mobility.

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### I. Approach

Place the patient in a prone position with the neck in slight flexion. Using a midline incision (Fig. 1), expose the laminae, and facets of the desired levels (Fig. 2).

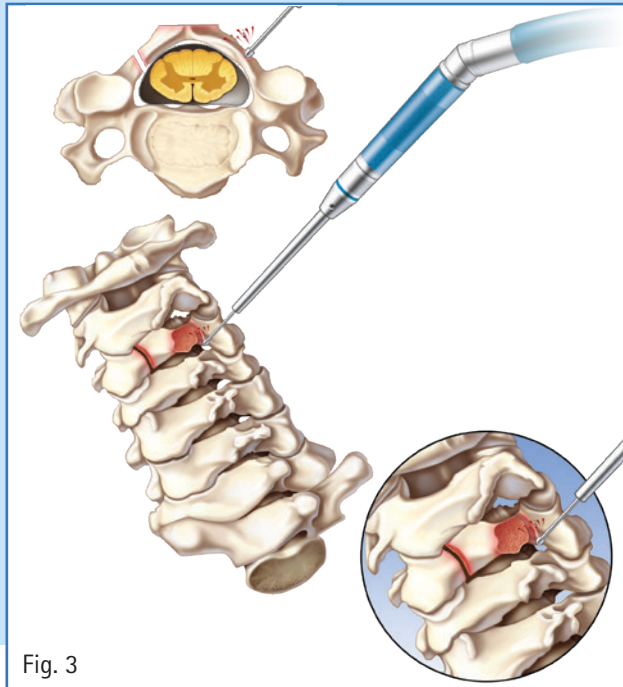


Fig. 3

## II. Preparation

Prepare the open side trough along the junction of the lamina and lateral mass. Use a high speed burr to transect the lamina 1 cm lateral to the midline. Take care to not contact the underlying dura.

**Caution:** *Cutting too far lateral will lead to extensive burring of the facet without detachment of the lamina, whereas cutting too medial will leave a lateral bony edge that may impinge the spinal cord as it drifts backwards.*

Decorticate the lamina on the contralateral side by scoring. Using a high speed drill, create a hinge. The hinge trough should be slightly more lateral than the lamina-facet interval (Fig. 3). With a depth to the dorsal cortex only.

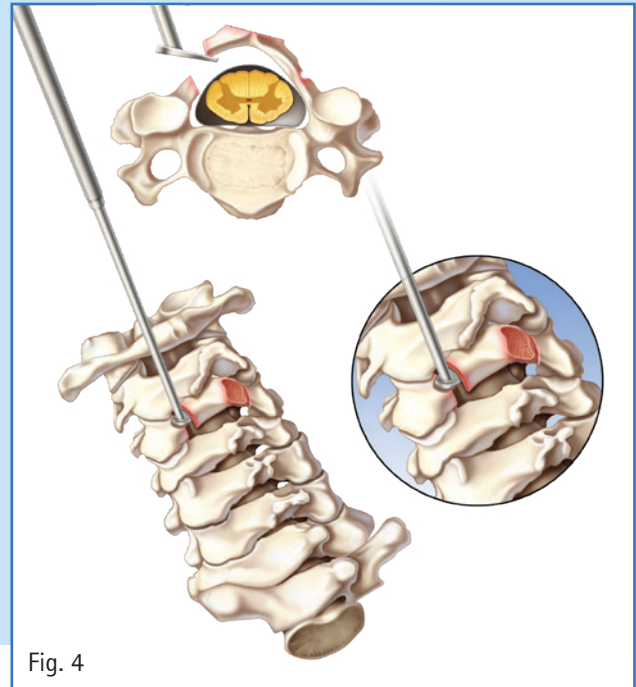


Fig. 4

## III. Laminotomy

- Remove soft tissue at the caudal and cranial endpoint as needed.
- Utilizing the lamina lifter, lift the lamina away from the spinal canal (Fig. 4).

**Note:** *the laminae are opened slowly, creating greenstick fractures of the thinned laminae on the hinge side.*

## IV. Trial Spacer

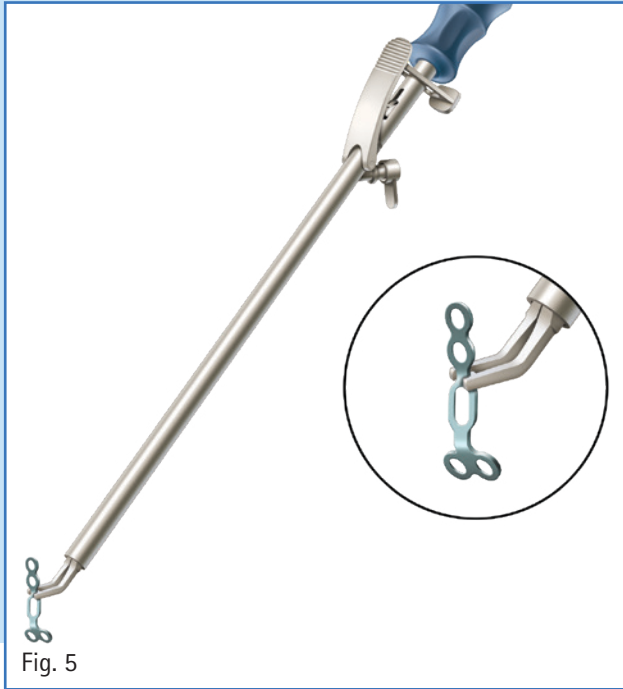
Determine the appropriate allograft size by inserting a trial implant (4 mm, 6 mm, 8 mm, 10 mm, 12 mm) into the laminar gap. The gap should be determined based upon tension provided back from the lamina. Allograft will need to be obtained from an appropriate bone bank and cut and sized appropriately.



FG837R

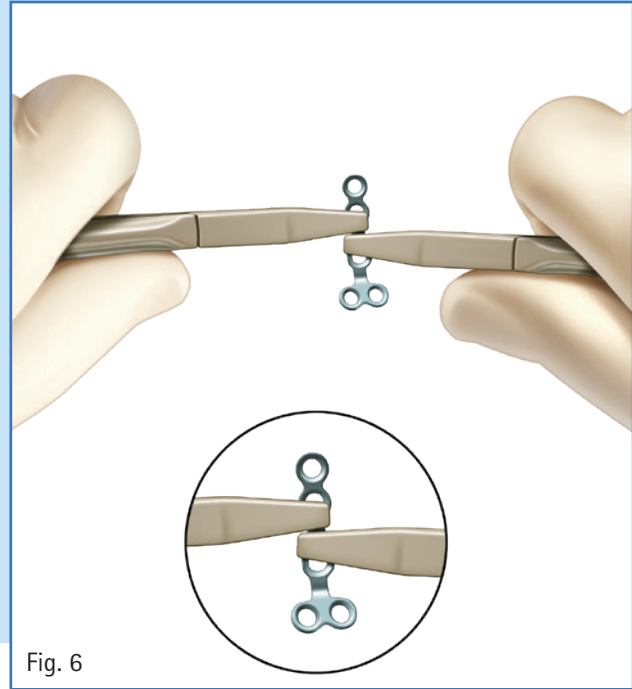
# SecureSpan™ Laminoplasty System

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### V. Plate Preparation

- A. Using the plate holder, pick the plate out of the caddy (Fig. 5).



### Plate Holder

Plate sizes (4 mm Brown, 6 mm Turquoise, 8 mm Yellow, 10 mm Grey/Silver, 12 mm Light Blue) are in terms of laminar gap. Color matches the size of allograft required.

- B. Using the plate benders, bend the plate to the desired angles (Fig. 6).

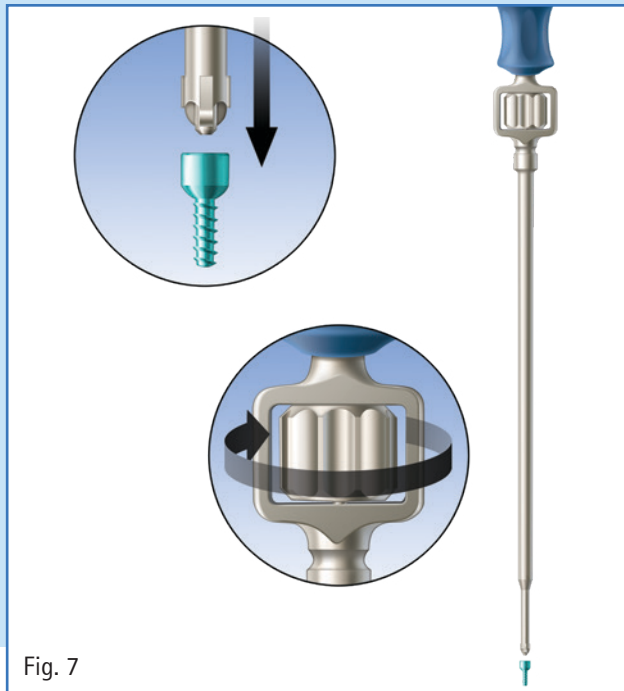


Fig. 7

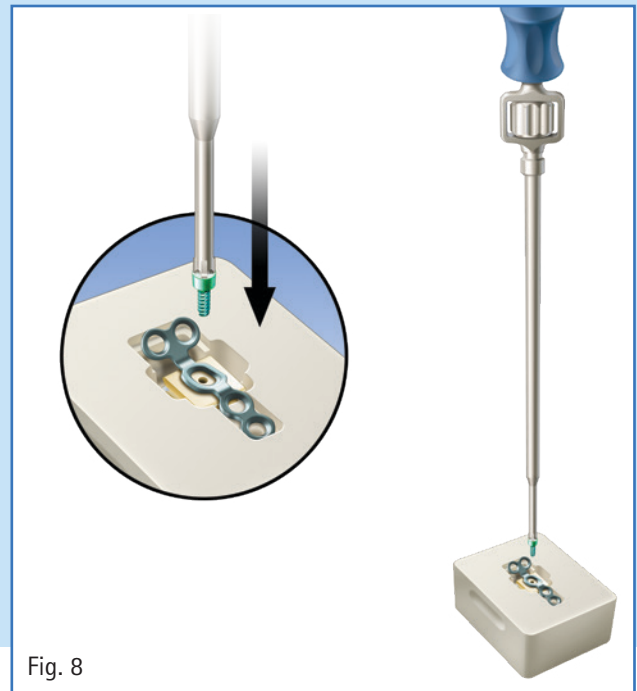


Fig. 8

## VI. Plate and Allograft Placement

- A. To load the allograft screw onto the screwdriver, place the screwdriver over the screw head and turn the screwdriver's thumbwheel until threaded internal shaft is fully engaged into the threaded receptacle in the screw head (Fig. 7).
- B. Placing the allograft in the preparation device, attach the plate to the allograft by inserting the self-tapping allograft center screw. (A center hole will need to be pre-drilled in the allograft.) Allograft choices are 4 mm, 6 mm, 8 mm, 10 mm, and 12 mm (Fig. 8).

**Note:** Place allograft into sterile water at least 30 seconds before use.

# SecureSpan™ Laminoplasty System

## Surgical Technique

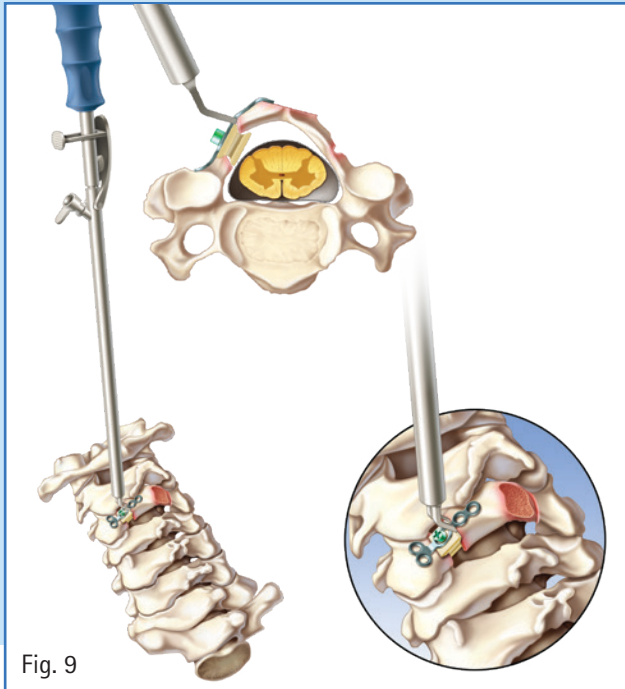


Fig. 9

- C. Utilizing the Plate or Allograft Holder, place the plate attached to the allograft into the laminar opening (Fig. 9).

**Note:** *Alternatively, the allograft can be placed and then the plate attached.*

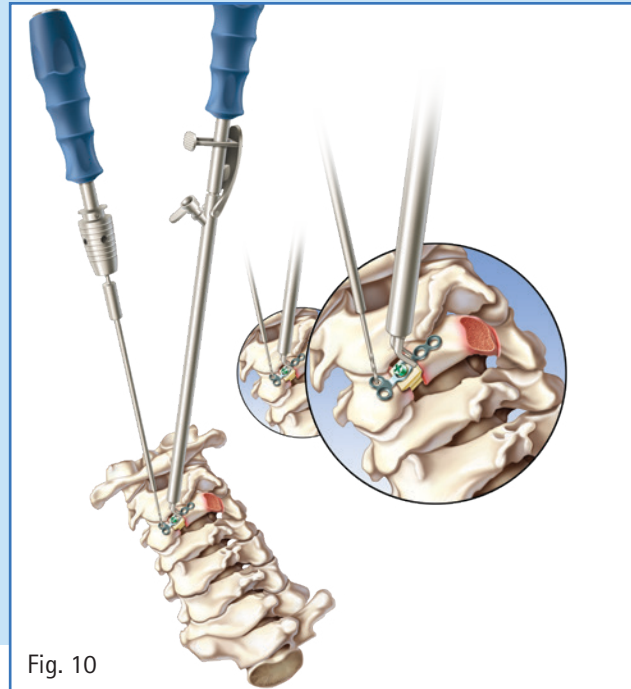


Fig. 10

### VII. Drill

- A. Drill Holes into the proper location on the lateral mass. Next drill holes on the lamina (Fig. 10).

**Caution:** *Ensure safe drill trajectory.*

- B. Drills are configured with self stop at lengths of 4 mm, 6 mm, 8 mm, 10 mm, and 12 mm.

**Caution:** *Care must be taken to not apply a pressure that can bend this small diameter drill.*



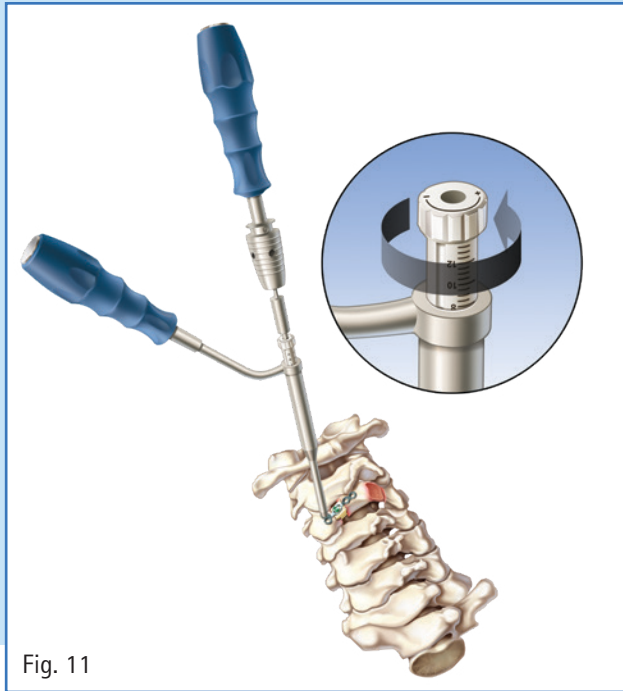


Fig. 11

### VII. Drill (continued)

- C. An alternative drill and drill guide with an integrated depth stop is provided (Fig. 11).

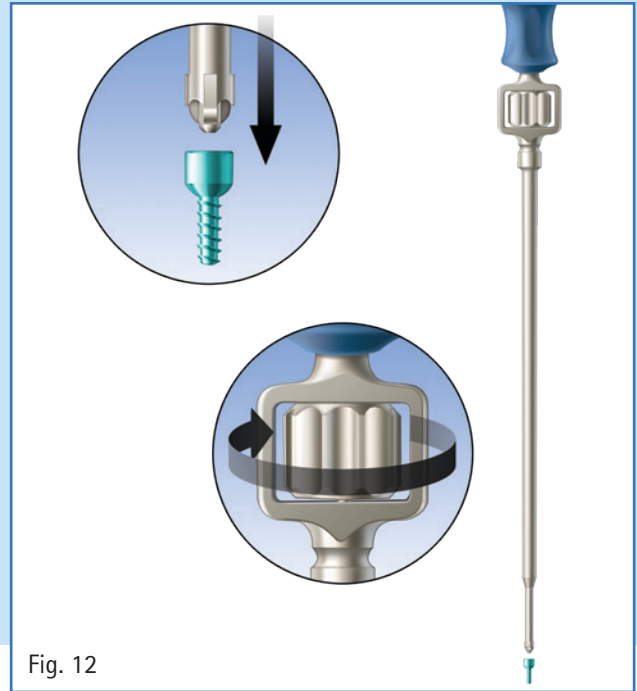


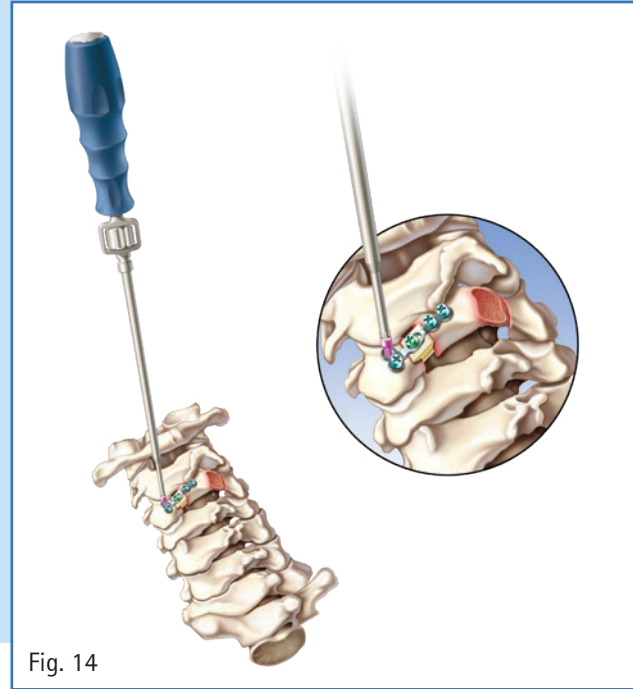
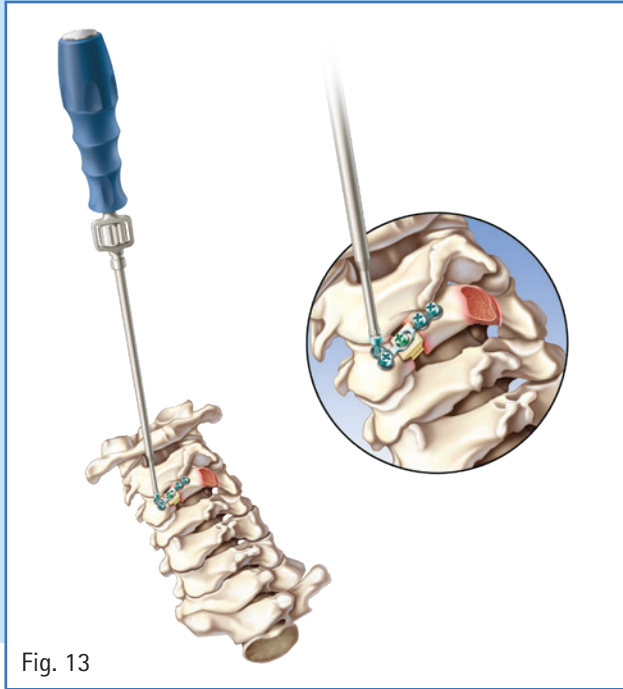
Fig. 12

### VIII. Secure plate and allograft

- A. To load plate screw onto the screwdriver, place screwdriver over screw head and turn screwdriver's thumbwheel until threaded internal shaft is fully engaged into the threaded receptacle in the screw head (Fig. 12).

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### VIII. Secure plate and allograft *(continued)*

B. Screw plate onto lamina at the predetermined hole location (Fig. 13).

C. Rescue Screws are provided if needed (Fig. 14).

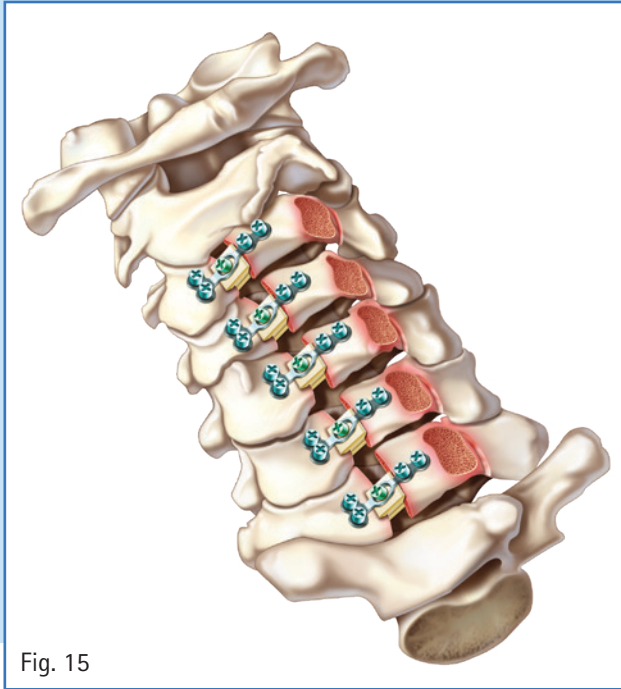


Fig. 15

**IX. Repeat previous steps at adjacent levels as necessary (Fig. 15)**

#### **X. Explantation**

- A. The Aesculap SecureSpan™ Laminoplasty screwdriver has the capability to explant the laminoplasty screw incorporated into its design. The locking feature of the internal threaded shaft allows for explantation of the screws even if the screw spins freely in the bone. Explantation is the reverse of the implantation procedure.

# SecureSpan™ Laminoplasty System

## Components

### Implants

#### Plates

Item No.	Description
FG906T	Plate Single Bend Gap 4 mm, Brown
FG907T	Plate Single Bend Gap 6 mm, Turquoise
FG908T	Plate Single Bend Gap 8 mm, Yellow
FG909T	Plate Single Bend Gap 10 mm, Light Blue
FG910T	Plate Single Bend Gap 12 mm, Grey/Silver



#### Screws

Item No.	Description
FG915T	Ø 2.0 Length 4 mm Self Drilling/Tapping
FG916T	Ø 2.0 Length 5 mm Self Drilling/Tapping
FG917T	Ø 2.0 Length 6 mm Self Drilling/Tapping
FG918T	Ø 2.0 Length 8 mm Self Drilling/Tapping
FG919T	Ø 2.0 Length 10 mm Self Drilling/Tapping
FG920T	Ø 2.0 Length 12 mm Self Drilling/Tapping



#### Screws

Item No.	Description
FG925T	Ø 2.4 Length 5 mm Emergency
FG926T	Ø 2.4 Length 6 mm Emergency
FG927T	Ø 2.4 Length 7 mm Emergency
FG928T	Ø 2.4 Length 9 mm Emergency
FG929T	Ø 2.4 Length 11 mm Emergency
FG930T	Ø 2.4 Length 13 mm Emergency



#### Screws

Item No.	Description
FG923T	Allograft Screw (to fix graft on plate)



# Components

## Instruments

Item No.	Description
FG848R	Screwdriver



Item No.	Description
FG849R	Graft Holder



Item No.	Description
FG847R	Lamina Lifter



Item No.	Description
FG851R	Plate Holder



Item No.	Description
FG861R	Handle for Drill



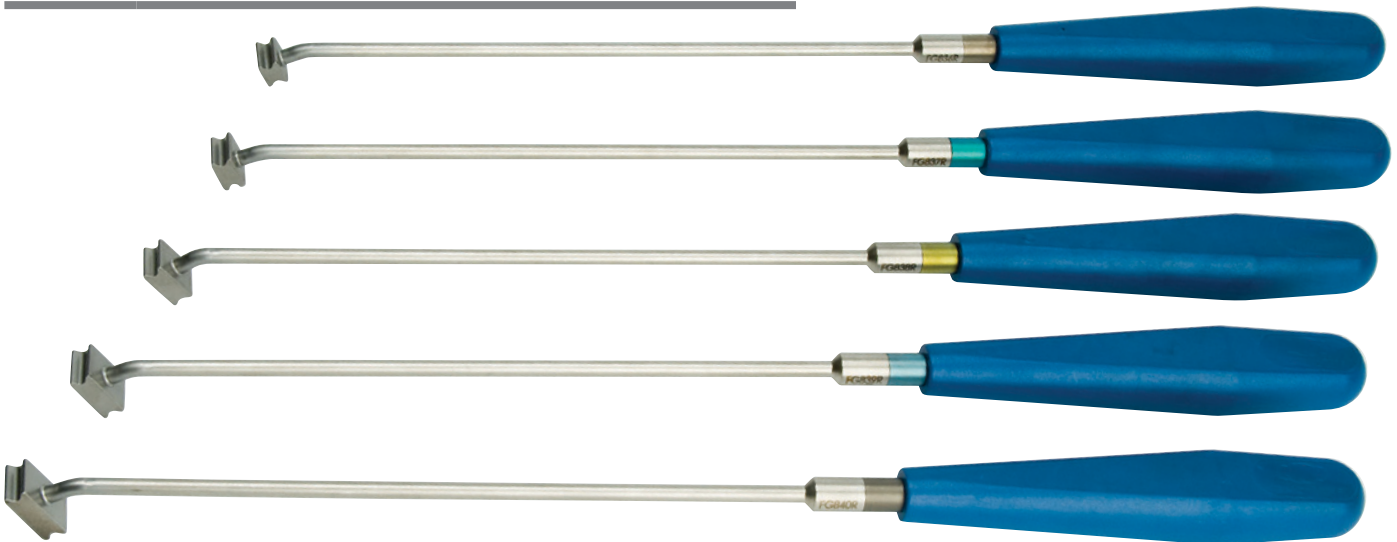
Item No.	Description
FM904R	Plate Benders

# SecureSpan™ Laminoplasty System

## Components

### Instruments

Item No.	Description
FG836R	Trial Implant 4 mm
FG837R	Trial Implant 6 mm
FG838R	Trial Implant 8 mm
FG839R	Trial Implant 10 mm
FG840R	Trial Implant 12 mm



Item No.	Description
FG856	Drill 4 mm Length
FG857	Drill 6 mm Length
FG858	Drill 8 mm Length
FG859	Drill 10 mm Length
FG860	Drill 12 mm length



# Components

Item No.	Description
FG868R	SecureSpan™ Drill Guide
FG869SU	SecureSpan Drill for use with Guide



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