



Alleviating Pain
SINCE 1962

LAMINOFIX
Cervical Laminoplasty

CERVICAL LAMINOPLASTY



GESCO HEALTHCARE PRIVATE LIMITED

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1. Patient Positioning and Exposure

The patient is placed in the prone position with the head and neck securely stabilized. The operative site is prepared and draped. A posterior midline incision is made, and subperiosteal dissection is performed to expose the posterior elements of the cervical spine at the desired levels. Once adequate exposure has been achieved, a high-speed burr, Kerrison rongeur, or a similar instrument is used to create the osteotomy by drilling through both the dorsal and ventral cortices at the lateral mass–laminar junction.

For an open-door laminoplasty, a complete trough is created on the open side of the lamina, while a partial-thickness trough is created on the contralateral side to serve as the hinge. Once the desired hinge flexibility has been achieved, the laminoplasty is gradually opened to create a controlled greenstick fracture. Using a curette or a similar instrument, dorsally directed force is applied to the ventral surface of the lamina on the open side until the desired canal expansion is obtained.

The lamina is then carefully elevated to enlarge the spinal canal. Care should be taken to preserve the integrity of the hinge by avoiding excessive bone removal, thereby maintaining adequate stability throughout the procedure.



2. Implant Selection

Following adequate canal expansion, select the appropriate trial implant, available in heights ranging from 8 mm to 16 mm in 2 mm increments. Insert the trial implant between the cut edges of the lamina and lateral mass to determine the appropriate implant size.

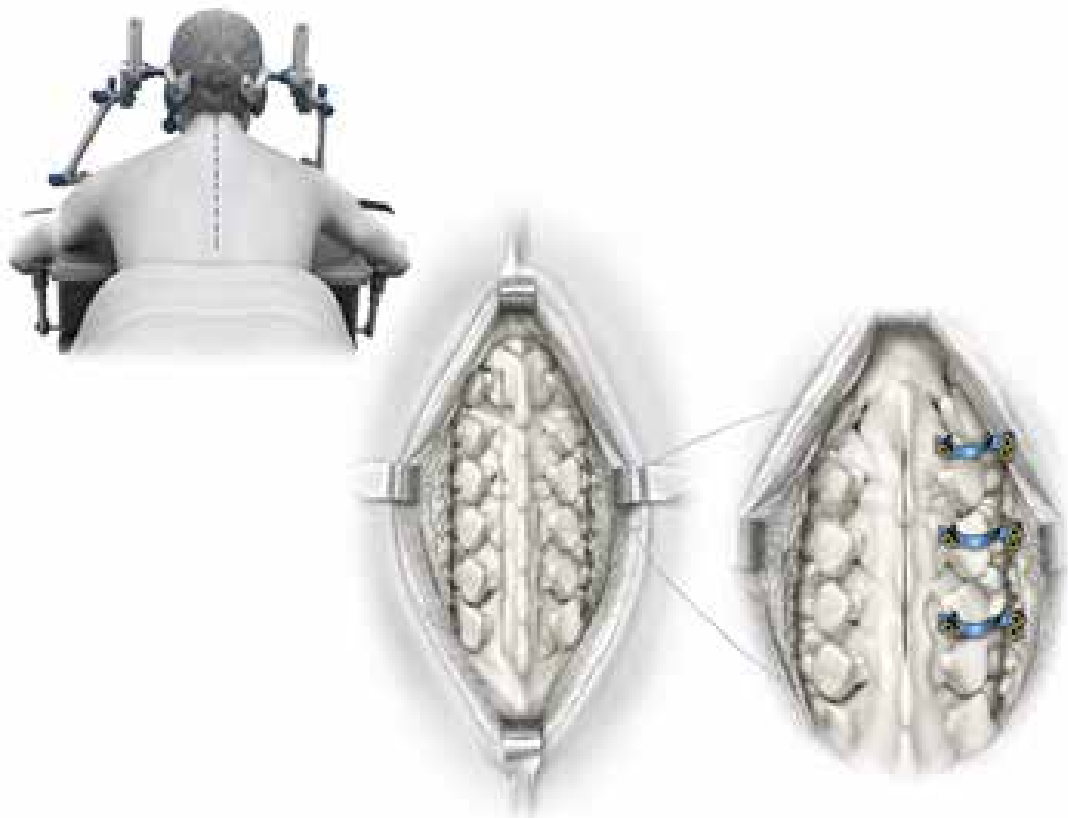
Using the plate holder, position the selected Laminofix Plate against the expanded lamina to verify the appropriate plate design and size before implantation.

The surgeon then selects the appropriate Laminofix Plate configuration based on the patient's anatomy, the planned laminoplasty procedure, and the desired laminar opening. Depending on the surgical requirement, either a Laminofix Plate CC T-Type Hook with Single Notch or a Laminofix Plate CC T-Type Hook with Double Notch may be used. Appropriate Laminofix Lateral Mass Screws (Self-Drilling) and Laminofix Laminar Screws with Head are then selected to provide secure fixation of the plate to the lateral mass and lamina.

3. Surgical Procedure

3.1 Surgical Exposure

Following patient positioning and standard sterile preparation, a posterior midline incision is made over the intended cervical levels. Subperiosteal dissection is performed to expose the posterior elements of the cervical spine, including the spinous processes, laminae, and lateral masses. An open-door laminoplasty is then performed by creating a complete trough on the intended opening side and a partial-thickness trough on the contralateral side to function as the hinge. The lamina is carefully elevated to enlarge the spinal canal while preserving the integrity of the hinge

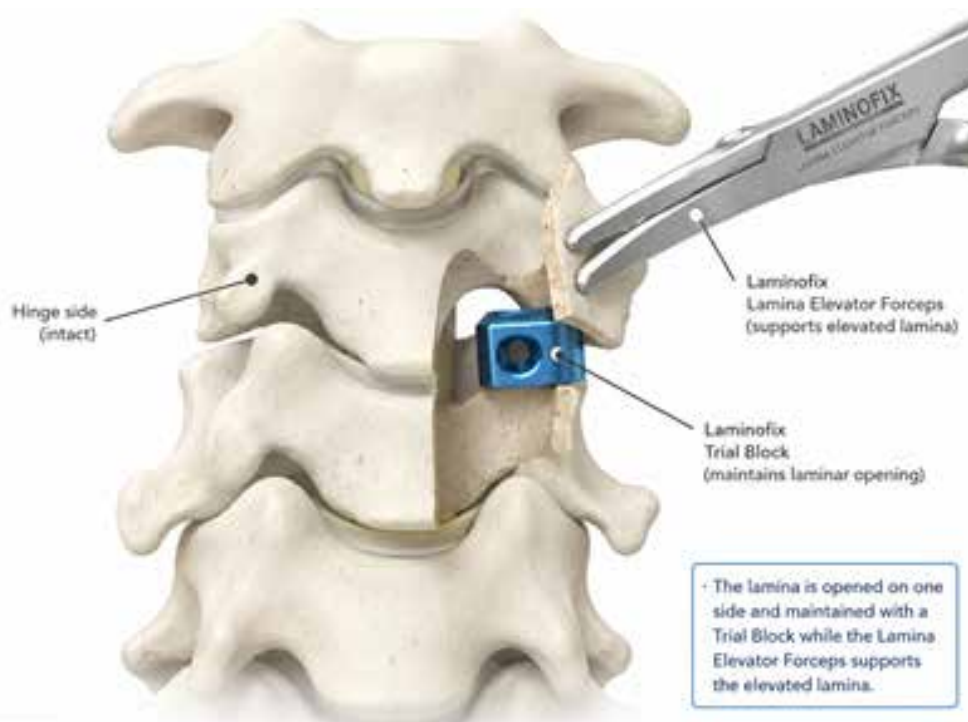


3.2 Implant Preparation

Based on the patient's anatomy and the planned surgical procedure, the surgeon selects the appropriate Laminofix Plate CC T-Type Hook with Single Notch or Laminofix Plate CC T-Type Hook with Double Notch. If required, the selected plate may be contoured using the Laminofix Plate Bending Plier to better conform to the anatomical curvature of the lamina and lateral mass. The plate is securely held and manipulated using the Laminofix Plate Holder during preparation and positioning.

3.3 Laminar Opening

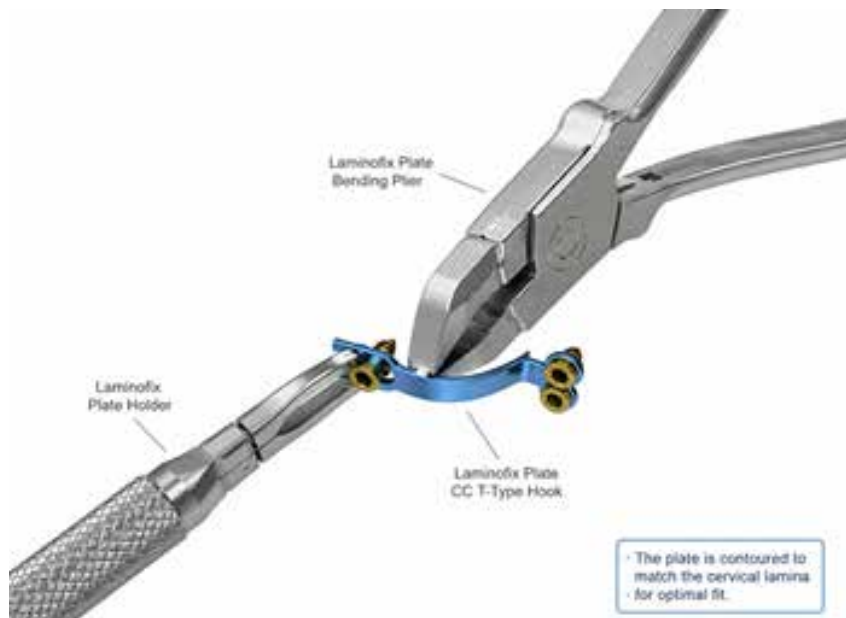
The appropriate Laminofix Trial Block is inserted into the laminar opening to maintain the desired expansion during implant placement. The Laminofix Lamina Elevator Forceps are used to gently elevate and stabilize the opened lamina while maintaining the desired canal expansion. The Trial Block assists in preserving the laminar opening until definitive fixation has been completed.



3.4 Plate Positioning

The selected Laminofix plate is positioned to bridge the lateral mass and the elevated lamina while maintaining the desired opening created during laminoplasty.

The Laminofix Laminar Screw Template may be positioned over the plate to assist in identifying the appropriate screw entry locations and to facilitate accurate implant placement.



3.5 Bone Preparation

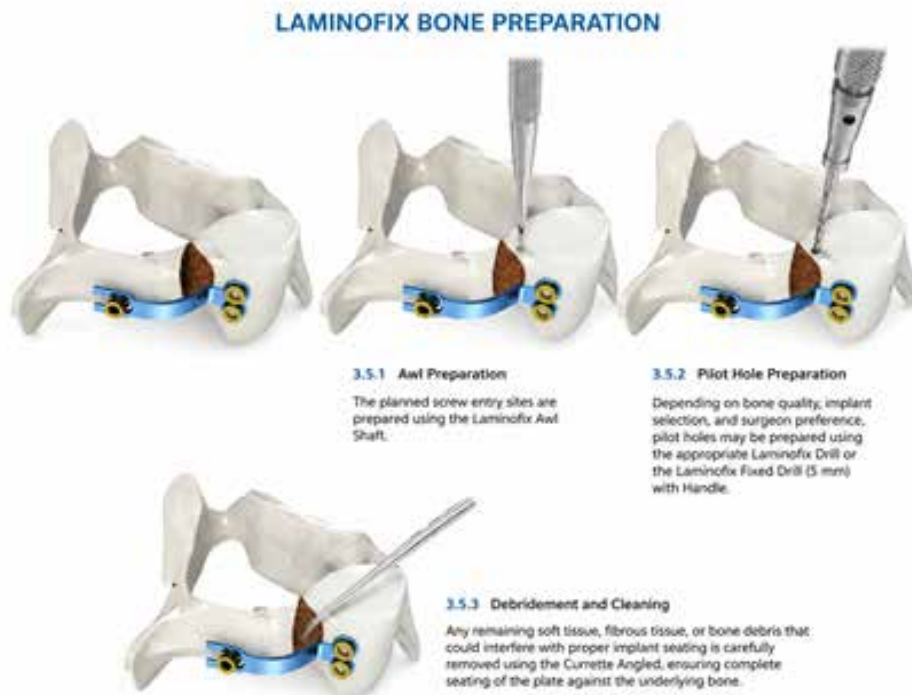
With the selected Laminofix Plate held in the desired position, prepare the planned screw entry sites using the Laminofix Awl Shaft.

Attach the awl to the quick-connect handle, center the tip within the plate hole, and press firmly until the stop contacts the plate.

When fully seated, the awl extends 2.0 mm into the bone.

Depending on bone quality, implant selection, and surgeon preference, pilot holes may alternatively be prepared using the appropriate Laminofix Drill or the Laminofix Fixed Drill (5 mm) with Handle, using the color-coded drill corresponding to the selected screw length to create a pilot hole matching with the screw's minor diameter.

Before screw insertion, any remaining soft tissue, fibrous tissue, or bone debris that could interfere with proper implant seating is carefully removed using the Laminofix Curette Angled, ensuring complete seating of the plate against the underlying bone.



3.6 Plate Fixation

The selected Laminofix Lateral Mass Self-Drilling Screw is engaged using either the Laminofix Screw Holder (Screw Type) or the Laminofix Screw Holding Sleeve, which facilitates secure handling and controlled insertion of the screw.

The lateral mass screw is inserted through the plate using the Laminofix Hexagon Screw Driver. When additional leverage or controlled ratcheting is desired, the A.O. Cannulated Ratchet Handle – Miniature may be attached to the screwdriver.

Once the plate has been secured to the lateral mass, the position of the lamina and the maintained opening are confirmed.

The appropriate Laminofix Lamina Screw with Head is then inserted through the laminar portion of the plate using the Laminofix Hexagon Screw Driver, thereby securing the elevated lamina to the implant. This sequence is repeated for each operative level until all selected Laminofix plates have been securely fixed.



3.7 Final Assessment

After all implants have been placed, verify that each Laminofix Plate CC T-Type Hook with Single Notch or Laminofix Plate CC T-Type Hook with Double Notch is correctly positioned and that the desired laminar opening has been maintained. Inspect all screws to ensure they are fully seated and provide stable fixation, then perform final tightening using the Laminofix Hexagon Screw Driver, with the A.O.

Cannulated Ratchet Handle – Miniature used as required to achieve secure fixation. Following confirmation of construct stability and adequate spinal canal decompression, remove the Laminofix Trial Block. Irrigate the operative site according to the surgeon's standard practice, achieve meticulous hemostasis, and close the wound in layers using the surgeon's preferred closure technique. Finally, apply a sterile dressing.



4. Implant Removal

Implant removal, when clinically indicated, is performed through the previous posterior cervical approach. After adequate exposure of the implanted construct, surrounding soft tissue is carefully cleared to expose the screw heads. The Laminofix Hexagon Screw Driver, with the A.O. Cannulated Ratchet Handle – Miniature if required, is used to sequentially remove the Laminofix Lamina Screws with Head and Laminofix Lateral Mass Self-Drilling Screws.

Where necessary, the Laminofix Screw Holder (Screw Type) or Laminofix Screw Holding Sleeve may be used to assist in controlled screw retrieval. Once all fixation screws have been removed, the Laminofix Plate CC T-Type Hook with Single Notch or Laminofix Plate CC T-Type Hook with Double Notch is carefully detached and removed. The surgical site is inspected, irrigated as required, and closed in accordance with standard surgical practice.

