



Expanders
RADHEX
IMPLANTS

EXPANDERS: Compressive Threading Osteotomy

PRODUCT OVERVIEW

Threaded expanders-compactors are medical devices for osteotomy, which stand out as extremely useful tools for the implantologist by facilitating the creation of osteotomic zones that are challenging with conventional surgical methods.

Radhex Implants® bone expanders, widely recognized as a benchmark in technological innovation for oral rehabilitation, have become essential for implant dentistry professionals. These devices not only minimize surgical trauma, but also enable measured and progressive expansion control, significantly improving the effectiveness of the procedure.

Radhex Implants® offers clinicians a wide range of expanders that simplify solutions and become an excellent and versatile tool for the operating surgeon:

- An expansion kit, which includes:
 - 6 expanders for the insertion of dental implants: whose measurements are appropriate to the most widespread diameters of dental implants.
 - 4 Conical Dilators.
 - 2 Straight Dilators.
 - Ratchet Wrench with 3.7 Hexagon.
 - Cutting instruments for expansive compression osteotomy: Lance drill, Disc and Fine osteotomy drill.
 - Manipulation Instruments for expansive compression osteotomy: Manual wrench, manual extender and contra-angle extender.

It is essential to avoid the use of expanders with a diameter greater than the implant to be inserted.

PRODUCT ADVANTAGES

ADVANTAGES:

- Its use is practically painless, providing an atraumatic experience for the patient.
- Dilates fine ridges, increasing thickness without compromising bone integrity.
- Compacts the bone around the implant, promoting an efficient osseointegration process.
- Allows precise control of the implant insertion axis during the intervention, guaranteeing optimal results.
- The progressive and threaded introduction of the expander generates bleeding, thus promoting osseointegration.
- It offers excellent manual or protractor control, minimizing the risks of lateral perforation in the labial area of the compact bone of the upper jaw.
- Its application is universal, adapting to all implant systems available on the market.
- It presents an economic system by replacing, in some cases, the use of cutters and avoiding unnecessary wear.

PRODUCT INDICATIONS

- Fine ridges regardless of bone type.
- Bone type II / III / IV.
- Type I bone, combining it with the traditional bur system.
- Atraumatic sinus lifts through the implant bed.

CHARACTERISTICS OF THE CLINICAL APPLICATION OF EXPANSION INSTRUMENTS

- Starting the procedure only requires the use of a fissure bur or round bur.
- In the case of bones with extreme atrophy, intermediate countersinking and tapping drilling are excluded from the protocol.
- The exclusive use of an opening bur significantly reduces the risk of tissue overheating.
- The use of compacted bone surplus in the neoalveolus is optimized throughout the entire procedure.
- For low-density atrophic bones, tricortical anchorage is achieved by expanding the cortical crest, allowing implant insertion larger diameter.
- Straight expanders facilitate atraumatic sinus elevation, avoiding fracture of the bone table.



Osteotomy for Implant Insertion

EXP: THREADED BONE EXPANDERS FOR OSTEOTOMY

This instrument allows for cavity formation by expansion.
Radhex Implants® expanders are specific for compaction in the treatment of low-density bones, particularly in the upper jaw, especially the postero-superior and also indicated in the antero-inferior area.

They allow promoting corticalization with greater bone density at the peri-implant level, ensuring greater long-term stability of the implant.
Its entrance allows the cavity to be expanded to the desired diameter, carrying out its mechanical work through compressive expansion by progressive wedging.

EXP



EXP0350	EXP0375	EXP0400	EXP0450	EXP0500	EXP0550
Tip: 1.8mm Length: 18mm Major Diameter: 3.5 mm	Tip: 2.2mm Length: 18mm Major Diameter: 3.7 mm	Tip: 2.5mm Length: 18mm Major Diameter: 4.0 mm	Tip: 3.0mm Length: 18mm Major Diameter: 4.5 mm	Tip: 3.0mm Length: 18mm Major Diameter: 4.5 mm	Tip: 4.0mm Length: 18mm Major Diameter: 5.5 mm



Coinage action
Compressive Profile Thread

DILATORS: Expansion of Atrophic Bones

SPECIFIC USES OF DILATORS

Radhex Implants® dilators collaborate simultaneously and in conjunction with bone expanders, which have a greater active capacity. This collaboration allows for more precise control of the expansion technique.

Its primary function is to sequentially supervise the controlled widening of the bone table until the precise moment of insertion of the implant into the oral cavity. This implant obviously fulfills the function of “definitive space retainer”, thus eliminating the need to resort to any other intermediate solution in this procedure.



INSTRUCTIONS FOR USE

EXP DC 01	EXP DC 02	EXP DC 03	EXP DC 04	EXP DR 02	EXP DR 03
Tip: 1.4mm Length: 14mm Major Diameter: 3.0 mm	Tip: 1.9mm Length: 14mm Major Diameter: 3.8 mm	Tip: 2.3mm Length: 14mm Major Diameter: 4.5 mm	Tip: 3.0mm Length: 14mm Major Diameter: 5.0 mm	Tip: 1.9mm Length: 14mm Major Diameter: 3.7 mm	Tip: 2.4mm Length: 14mm Major Diameter: 4.2 mm

TECHNICAL SPECIFICATIONS

The design of the Radhex Implants® brand Threaded Bone Expanders includes the following features:

- Torque socket with 3.7 Hexagon and elastic retention.
- Smoothly conical walls, which ensure expansion with progressive, non-abrupt release of forces.
- Progressive expansion sequence, with an increase in diameter.
- Marked by laser identification engraving, for product reference.
- Application: Manual using a ratchet wrench.
- The profile of the instrument does not reproduce the implant core.
- Recommended work speed: 25 R.P.M.
- Attention:

Verify the working depth during the application of the technique.
Control the progression of the expansion to avoid board fractures.
Control the working direction of the instrument.

EXPANSIVE OSTEOTOMY: Cortical Split Step by Step



01- Stippling and bone opening with Strawberry and Disc Stippling



02- Stippling with a fine bur or lance bur in the application area



03- Progressive introduction of the first threaded expander 50 RPM



04- Expansion sequence continuity



05- Expanders are being replaced with larger diameter ones



06- At the same time, those with a smaller diameter are introduced



07- The Expanders are positioned and crestal enlargement is observed



08- The green stem fissure of the vestibular cortex can be observed



09- Implants are inserted



10- Implant placement is completed



11- The implants are positioned with correct vertical adjustment



12- Crestal widening has been obtained that has allowed insertion of 4mm diameter implants in a thin ridge.

INSTRUMENTAL ACCESSORY

EXPANSION KIT: COMPOSITION

Radhex Implants® offers clinicians a wide range of expanders that simplify solutions and become an excellent and versatile tool for the operating surgeon:

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EXPANSION KIT INSTRUMENTS

Strawberry Spear:

To perforate the ridge and allow the introduction of the No. 1 expander.

Circular Disc Milling Cutter:

It is used for the longitudinal opening of the ridge.

Osteotomy Drill:

*It is used for the longitudinal opening of the ridge.
It is used with high speed turbine and irrigation.*

Manual Handle Wrench:

Provides fine touch sensitivity control for expansion control.

Manual extension:

Extender wrench for Manual or Ratchet Handle.

Contra angle extension:

Extension key for contra angle.

Rattle:

For progressive and controlled adjustment and insertion of the expander.



EXPANSIVE OSTEOTOMY KIT



Strawberry for
Osteotomy



Strawberry
Circular Disc



REF: FRL 001L
Strawberry Spear



REF: MNG0001
Manual Handle



REF: PRM 001
Extender
Short Manual



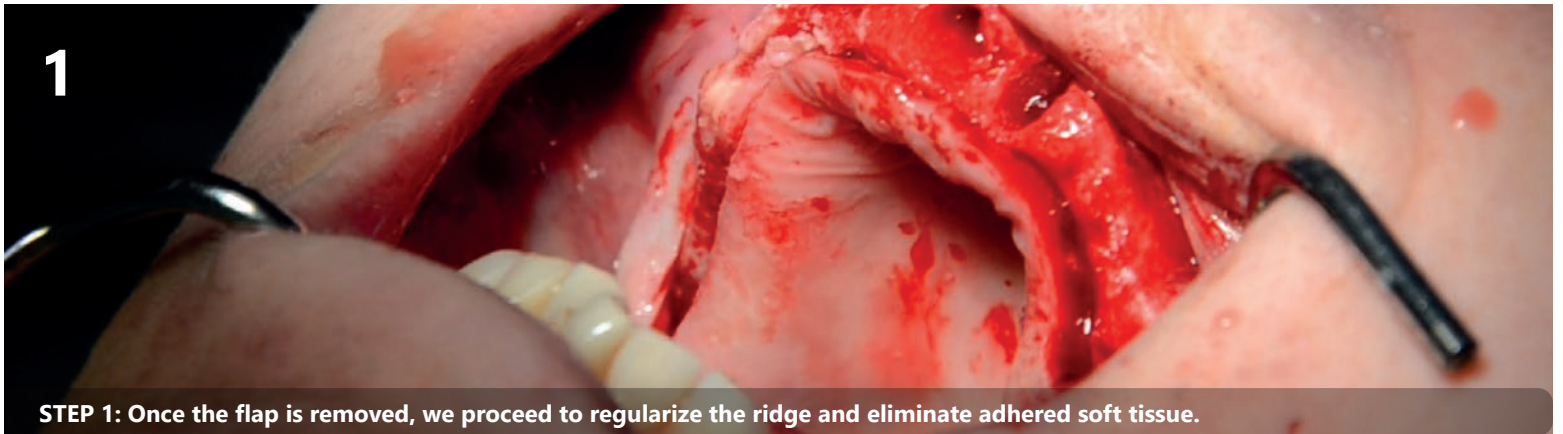
REF: PRM 002
Extender
Long Manual



REF: CRR 001
Ratchet

CRESTAL EXPANSION SEQUENCE: Clinical Case

1



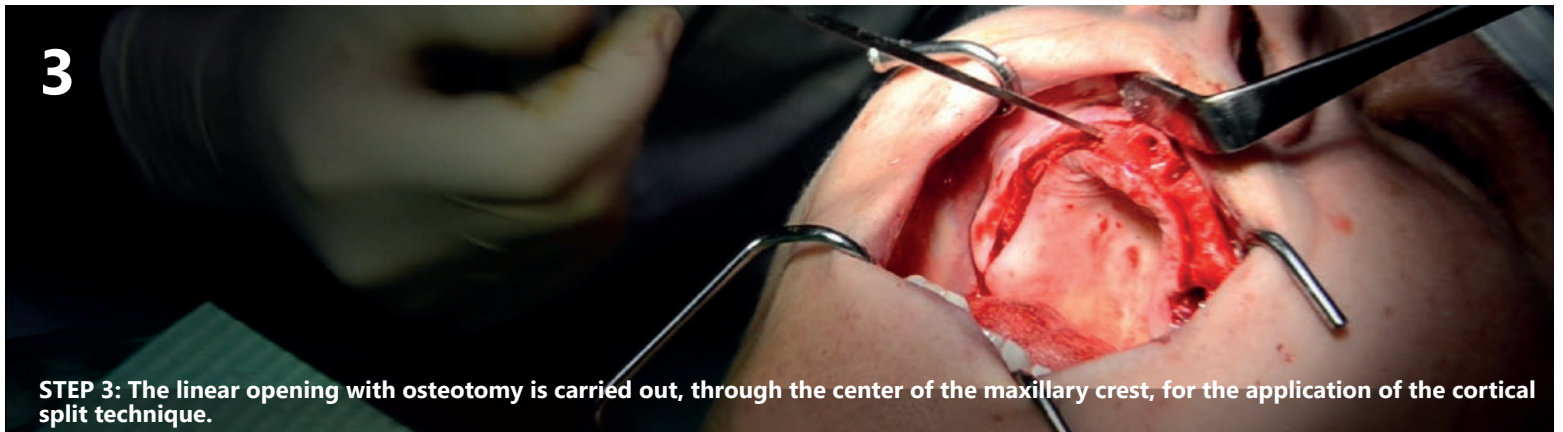
STEP 1: Once the flap is removed, we proceed to regularize the ridge and eliminate adhered soft tissue.

2

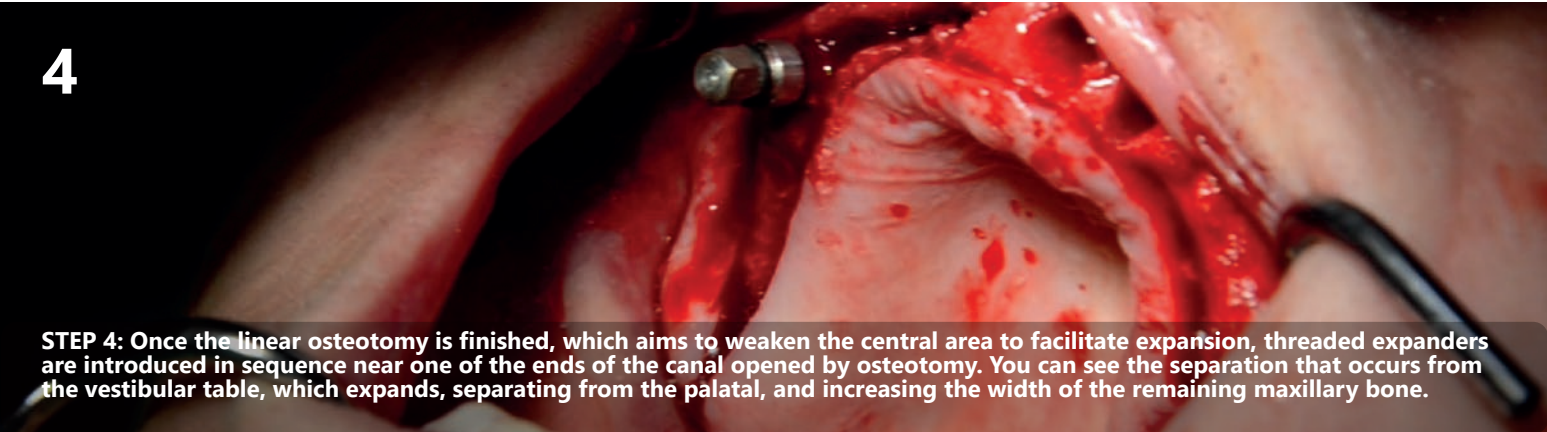


STEP 2: Before introducing the expanders, work with a lance drill to mark the initial guide of the path, where the bone expanders will be threaded.

3

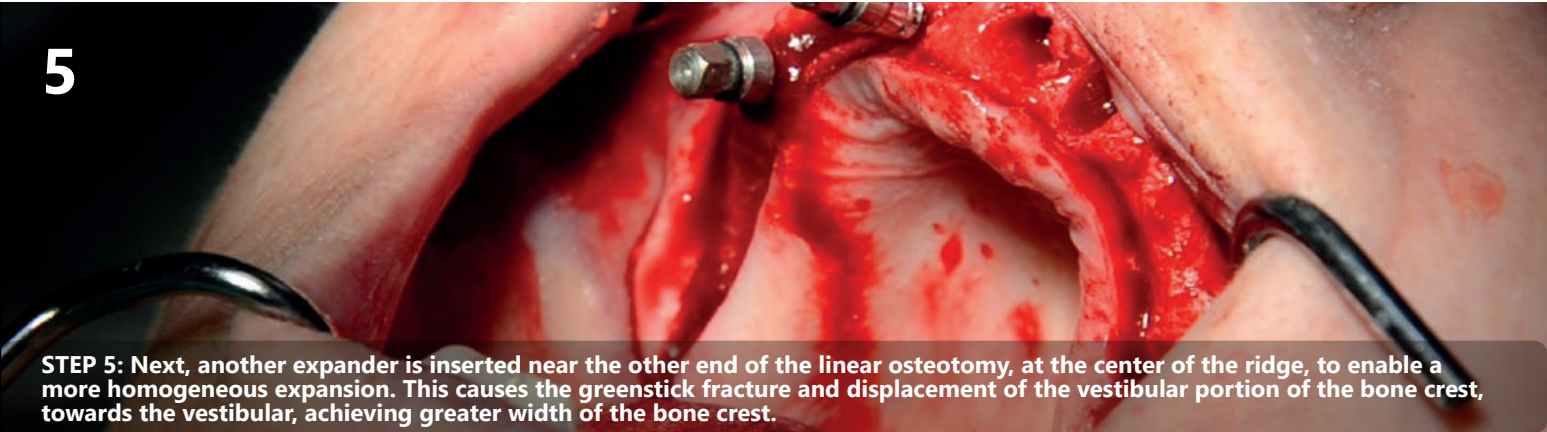


STEP 3: The linear opening with osteotomy is carried out, through the center of the maxillary crest, for the application of the cortical split technique.



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STEP 4: Once the linear osteotomy is finished, which aims to weaken the central area to facilitate expansion, threaded expanders are introduced in sequence near one of the ends of the canal opened by osteotomy. You can see the separation that occurs from the vestibular table, which expands, separating from the palatal, and increasing the width of the remaining maxillary bone.



5

STEP 5: Next, another expander is inserted near the other end of the linear osteotomy, at the center of the ridge, to enable a more homogeneous expansion. This causes the greenstick fracture and displacement of the vestibular portion of the bone crest, towards the vestibular, achieving greater width of the bone crest.



6

STEP 6: It can be clearly observed how a widening has been obtained by cortical split osteotomy, in the atrophic arecresal, which allows the insertion of dental implants for the rehabilitation of the case. It is then filled with biomaterial and covered with membrane and suture for the healing stage.

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Premium Expanders



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