Expansion and Arch Development is a broad term used to describe appliances designed to treat “crowding,” the most common type of malocclusion in mixed-dentition patients. These appliances can be used to gain both arch width and length, can use a variety of forces, and may be either fixed or removable. Designed properly, expansion appliances can be used to alleviate crowding in the posterior segments, develop immature premolars, and relieve anterior crowding. They can move teeth on either side of the arch unilaterally or bilaterally.

Fabrication Requirements: Please provide upper and/or lower stone work model(s). To ensure the most accurate fit, we recommend that whenever possible, bands should be prefitted to the patient and either placed on the work model, fitted into the impression, or enclosed separately with the plain model.

Bonded Rapid Palatal Expander

1101

The Bonded RPE is similar to the banded version with the exception of the method of attachment to the teeth. This appliance is constructed with an acrylic cap over the posterior segments, which is then bonded directly to the teeth. To aid in the debonding of the RPE at the end of treatment, Great Lakes offers the option of Debonding Loops. The buccal portion of the framework is eliminated and wire loops are incorporated into the acrylic. The end of the loop rests on the occlusal surface, the rounded portion extends beyond the appliance allowing it to be gripped and twisted, thereby breaking the seal. Auxiliaries such as face mask hooks, cribs, archwire tubes, and headgear tubes can be added.

Hygienic Rapid Palatal Expander

B109

The Rapid Palatal Expander is an all-metal expansion appliance typically providing sutural separation of 11mm within a very short period of wear. Up to 13mm is possible. Appliance screw is activated from front to back. Each activation of the screw produces approximately .2mm of lateral expansion. Our standard design is a two-banded style, this aids in cases with a difficult path of insertion or missing teeth. A four-banded version is available when path of insertion is not a concern and a more rigid appliance is desired.

Optional Screws:

Fan Type RPE Screws

This screw option is ideal for cleft palate patients and uses a 9mm fan type expansion screw to symmetrically expand anteriors laterally with minimal posterior tooth movement. This expansion screw is also available with an 8 or 9mm screw set in a Haas-style acrylic for both tissue and tooth borne anchorage. The screw is activated from front to back.

Compact RPE Screws

This 12mm compact expansion screw increases tongue space, reduces tissue impingement, allows easier access for hygiene and increased patient comfort.

DeLuke Contoured Expander (DCE)

1107

Although similar in appearance and function to a bonded rapid maxillary/palatal expander, the DCE eliminates the need for metal framework. This innovative frameless design makes the DCE easy to insert and remove, improving patient comfort. The DCE is fabricated on the Biostar® using Splint Biocryl to ensure uniform thickness. This fabrication technique, along with a simple one-step cementation process, results in less chair time. The natural anatomic contour at buccal and gingival margins eliminates plaque trap and reduces inflammation, making the DCE extremely hygienic.

Hilgers Pendex

B111

This appliance is designed to produce orthopedic expansion of the maxilla, as well as rotate and distalize maxillary first molars, without much cooperation from the patient. It utilizes the components of both the Haas and Quad Helix appliances. The acrylic button is an effective anchoring component and .032 TMA* springs produce a light and continuous force against the molars.

* TMA wire is a trademark of Ormco Corporation, Glendora, CA
Expansion/Arch Development

**Hilgers T-Rex**  
B140  
This appliance is designed similar to the Hilgers Pendex with the addition of anchor arms soldered to the molar bands. This allows expansion before molar distalization by cutting the anchor arm connection. It utilizes the components of the Haas and Quad Helix appliances. It produces orthopedic expansion of the maxilla, as well as rotate and distalize maxillary first molars. .032 TMA* springs produce light and continuous force against the molars. The acrylic button is an effective anchoring component.

**IPC Rapid Palatal Expander**  
B131  
Designed for orthopedic expansion along with labial alignment of incisors. As expansion occurs, the IPC controls the NiTi open coil spring force applied to the lingual surface of the anterior teeth. Wire around the distal end of the lateral incisors limits the midline diastema that often occurs during RPE treatment.

**Haas Palatal Expander**  
B110  
The Haas appliance is both tissue and tooth borne and has an extensive amount of palatal acrylic which acts on the palatal mucosa.

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**Quad Helix** (pictured)  
B112  
The Quad Helix is a versatile appliance used to correct unilateral or bilateral crossbites, expand posterior segments, and align crowded teeth. This appliance has many adjustment points, most of which can be activated introrally using a three-prong plier. It is also commonly fabricated as a removable appliance for extraoral adjusting.

**Bi Helix**  
The Bi Helix is an adaptation of the Quad Helix designed for the mandibular arch. The absence of anterior helixes aids in patient comfort.

**3D* Quad Helix Appliance**  
**3D™ Modular (Wilson) Appliances**  
B114  
This group of appliances is a series of prefabricated modulars that can be quickly adapted to the molar bands. They serve as an adjunct to a variety of treatment approaches, as well as achieving a wide range of orthodontic movement when used individually.  
*Trademark of Rocky Mountain Orthodontics

**Expansion “W”**  
(pictured)  
B113  
The Expansion “W” is the simplest version of a Quad Helix expansion appliance and is suitable for use on either the maxillary or mandibular arch.

**Porter Appliance**  
The Porter appliance is a removable version of the “W” appliance. This feature allows for the appliance to be activated and adjusted extraorally.
Expansion/Arch Development

Fixed Transverse
B117
The Fixed Transverse appliance is an excellent alternative to a removable Schwartz plate, particularly in cases where poor retention is present or patient cooperation is questionable. The adaptability of this appliance to other treatment modalities is an added feature.

Spring Jet* 1 - Slow Expansion
B141
Precise force-counterforce mechanics achieve slow arch expansion with controlled, continuous NiTi spring force.

Spring Jet* 2 - Rapid Expansion
B142
Alternative for screw or pre-set wire expanders, the Spring Jet 2’s unique delivery system offers reliable results with minimal tipping and no patient compliance.

The simple, comfortable Spring Jet allows a constant expansion force. After correction, the Spring Jet can be easily inactivated and kept in place as a retainer. The molars will move with little change in angulation, and can be used for anchorage during correction of the other dental inclinations.

The active components of the appliance are soldered or attached to the molar bands in the same way as a traditional expander. The transpalatal arch is replaced by a telescopic unit with a nickel titanium coil spring and a lock screw. Activation of the coil spring is achieved by moving the lock screw horizontally along the telescopic tube. A ball stop on the transpalatal wire allows the spring to be compressed.

*NiTi is a product of American Orthodontics.

Nitinium Palatal Expander
B126
The Nitinium Palatal Expander is a fixed/removable nickel titanium appliance. The expander incorporates a lingual attachment that fits into a horizontal lingual sheath welded to the maxillary molar bands. The appliance exerts a continuous low force on the maxillary teeth and midpalatal suture. This is provided by harnessing the wire’s shape memory at body temperature. If 6mm or more of expansion is needed, two separate removable expanders should be used sequentially.

IPC E-Arch (Arnold) Expander
B135
Ideal for transverse expansion of maxillary or mandibular arches where patient compliance is a concern. A tube-like framework is located on half of the arch which is connected to the Inman Power Component (IPC) on the opposing side. Activation occurs by sliding the collar anteriorly along the IPC compressing the NiTi open coil springs against the tube.

Lab Tip: We’ll keep your technical specifications on file when you enroll in our FREE Master Prescription Program. Contact Lab Customer Service for details.
Transverse
A103
The Transverse appliance is recommended when there is an arch width deficiency in the maxilla. It features multiple clasping and two sutural expansion screws placed on the midline for added rigidity.

Nord
A106
The Nord appliance is designed for correction of a unilateral cross bite. It uses a smooth posterior bite plane on the side to be expanded and an indexed posterior bite plane and lingual flange on the opposite side for support and anchorage.

Inman Bonded Cross-Bite
C112
For anterior cross-bite correction. NiTi coil springs create piston-like forces to move anterior teeth forward. Eliminates the need for finger springs, screws, or adjustments. The force is constant and does not deflect towards the incisal, unlike finger springs. Ideal if patient cooperation is a concern.

3-Way Sagittal
C101
Two- and Three-way Sagittals are primarily used in cases where the cuspsids are labially displaced. Correction is achieved through activation of the sagittal screws. When additional arch width is required, the sutural screw is activated. Retention is obtained by incorporating ball and adams clasps.

IPC Mandibular Sagittal
B132
In addition to molar distalizing force, this appliance applies pressure to the anterior teeth to move them in a labial direction. Activation occurs as the Inman Power Component (IPC) collar compresses the NiTi open coil spring against the molar tube.

Upper Schwarz
A104
This appliance is used for bilateral cross bites and also to help eliminate anterior crowding.

Lower Schwarz
A117
When expansion is required in the mandibular arch, the Schwarz can be fabricated to fit the lower.

Lab Tip: Need an appliance in a hurry? Rush service is available upon request. Contact Lab Customer Service for details.
Molar Distalizing Appliances

**Hilgers Pendulum**

**B120**
This appliance is intended to produce a molar distalizing effect in the maxilla in the range of approximately 5mm. A large acrylic button is used as an anchoring component and .032 TMA* springs produce a light and continuous force against the molars. The anchoring component is secured to the bicuspids or primary molars with bands or bonding.

* TMA wire is a trademark of Ormco Corporation, Glendora, CA.

**IPC Maxillary Molar Distalizer**

**B133**
This appliance provides effective distal molar movement and limits mesial movement through the incorporation of a Nance button. The Inman Power component (IPC) extends through tubes to guide the maxillary first molars during distalization. Activation takes place by compressing the NiTi open coil springs against the molar tubes.

**Lower Fixed Sagittal**

**B127**
The Fixed Sagittal appliance serves as an alternative to a removable sagittal in cases where retention is difficult or patient compliance is an issue.

**Unilateral Distal Jet**

**B125**
The Distal Jet is a fixed lingual appliance that can produce unilateral or bilateral molar distalization and rotation corrections. NiTi coil springs provide the distalizing forces. By adding Helical loops to the molar bayonet wire, the molars can be rotated or uprighted. The Distal Jet can also be converted to a Nance holding arch without removing the appliance.

**Bilateral Distal Jet**

**B124**

**SDDA**

**B128**
The screw driven distalizing appliance (SDDA) utilizes a full size expansion screw to distally drive molars using a Nance button for anchorage and stability. Also available in unilateral.

**Hilgers/Tracey Mini Distalizer**

**B130**
An excellent choice to expand the maxilla, distalize upper molars, create room for erupting cusps, and unlock the anterior occlusion. Tooth movement generally begins in three to six weeks. A mini expansion screw provides up to 12mm of expansion. Two .045" stabilizing wires extend from the bicuspids to the molars to add rigidity and simplify placement of the appliance as a single unit. This unique design provides consistent, reliable overall expansion while rendering the preactivated distalizing springs passive during the expansion phase. The compact, yet exceptionally stable design makes it comfortable without compromising effectiveness. The absence of palatal coverage increases tongue space, eliminates tissue impingement, and provides easy access for hygiene.

**Fabrication Requirements:** An accurate model with stainless steel bands with .036” sheaths. If you prefer, our lab will place the lingual sheaths on bands for a nominal fee.
Lip Bumper with Acrylic Pad  
B119  
Lip Bumpers may be used on the maxillary or mandibular arches to distalize the first permanent molars. They may also function to disengage a hyperactive mentalis or orbicularis oris muscle. The appliance consists of a labial wire which terminates in buccal tubes on molar bands.

ACCO  
A107  
The ACCO is used to distalize the molars while maintaining anterior position. Headgear loops are used for additional force. An anterior bite plate is used to disclude the posterior teeth.

Shamy  
A108  
The Shamy is used to distalize a molar. Adams clasps are used for retention on the first bicuspid and on the opposite molar that is being distalized. An anterior bite plate is used to disclude the posterior teeth.

Fixed Transpalatal Arch  
B121  
The appliance is excellent at maintaining acquired expansion. It can be designed with a solid transpalatal bar or with an omega loop allowing for adjustment and producing molar rotation. This appliance can also be fabricated in a removable version.

Lingual Arch with Loops  
B122  
Lingual arches are available in various lengths. Arches can either be ideally shaped or closely contoured to the existing arch configuration. They may include loops for adjustment and can also be made removable from bands.

Nance  
B123  
The Nance appliance is available with either straight or re-curved arms. It can either be removable or soldered to the bands. The Nance is effective in preventing mesial molar drift, and in the curved arm design, facilitates expansion or rotation of the molars.

Lab Tip: When shipping your case, wrap bands and small components separately so that they are not lost or accidentally discarded when the package is opened.