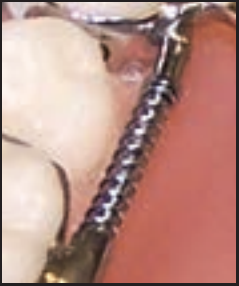


MemRx Orthodontic Appliances



MemRxTM

System of Appliances

Uses and Instructions

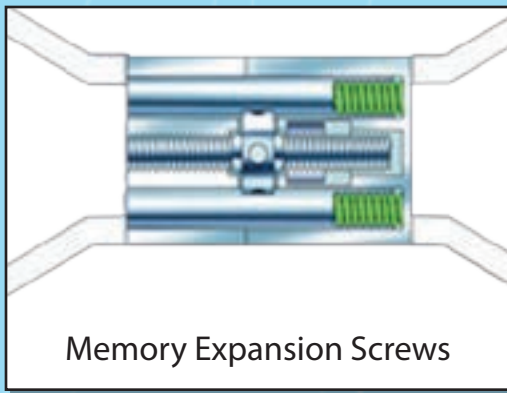


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As the need for faster, more efficient treatment of non-compliant patients increases, orthodontic technology and materials has had to grow to meet that need. Over the years, new orthodontic appliances have been developed that have been based on fundamentally sound principles yet have lacked the necessary technological advancement to make them truly unique, until now.

MemRx appliances, built on fundamentally sound principles of tooth movement with light spring pressure, combat the age old problems of patient compliance and oral hygiene with the new technology of spring loaded memory expansion screws, nickel titanium coil springs and the revolutionary Inman Power Component.

Memory Technology



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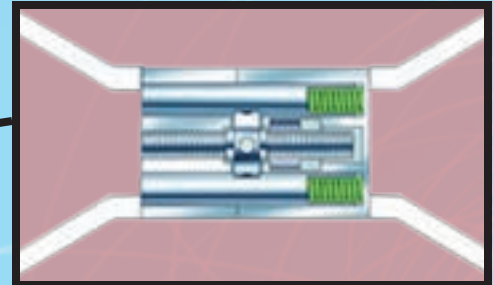
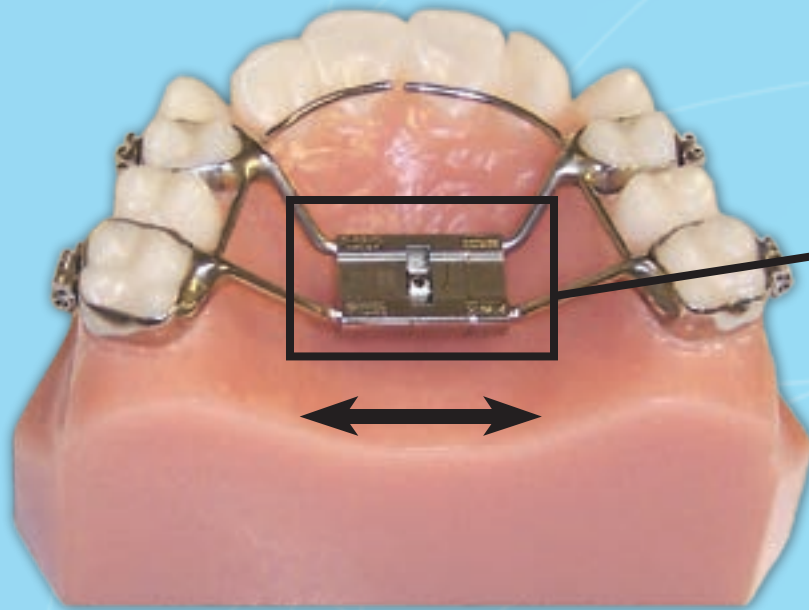
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Reasons To Use MemRx Orthodontic Appliances

The MemRx Series of appliances are Fixed Orthodontic appliances designed to expand arches and help align teeth. They are unique in that they employ an adjustable spring loaded Memory Expansion Screw and an Inman Power Component. The flexible designs of the MemRx appliances will enable the doctor to expand the arches, distalize molars and bicuspid or move incisors anteriorly. In some cases, by using the Inman Power Component, these movements can be combined into one appliance, eliminating the need for multiple appliances. The all-new MemRx appliances are unique in a number of ways. There are many advantages to using the MemRx System over currently available appliances.

Consider just a few:

- **Memory Expansion Screws.** Using the latest in Nickel Titanium Spring Technology, the doctor can now place multiple adjustments into a MemRx appliance at the initial seating appointment. Faster and more efficient treatment time with fewer patient visits. 8 millimeter and 10 millimeter sizes are available.
- **Revolutionary Inman Power Component.** Unlike the uncontrollable pre loaded appliances currently available, the I.P.C. gives the doctor complete control of spring pressure while advancing anterior teeth or distalizing posteriors. It comes with a unique adjustment tool for easy engagement of the I.P.C. sliding collar and compression of NiTi coil springs.
- **Nickel Titanium Coil Springs.** Consistent “unloading forces” means predictability of movement and greater patient comfort. This aids the doctor in opening and closing spaces with optimum efficiency and control. Usually between 5-12 millimeters in length, varying according to application.
- **Hygienic.** MemRx appliances are made completely from the highest quality stainless steel. They have eliminated the need to have large amounts of acrylic and the associated hygienic problems that come from fixing acrylic in the mouth.
- **Versatile.** Available in both fixed and removable designs. Most fixed designs are capable of supporting any Straight Wire technique. MemRx appliances can be designed to make both unilateral as well as bilateral movements. Adding a Memory Expansion Screw to any design, allows for lateral development of the arch as well.
- **Superior Components.** MemRx appliances feature both new and proven technologies to enhance the effectiveness and versatility of the doctor’s designs. Some of these components include:
 - **Molar and Bicuspid Bands:** Can have Straight Wire buccal tubes and brackets attached in most cases.
 - **Bonded Occlusal Rests:** May be used instead of bicuspid bands when a proper path of insertion does not exist.
 - **“C” Clasp:** May be used instead of bicuspid bands when a proper path of insertion does not exist or when bicuspid are not fully erupted.
 - **Lingual / Transpalatal Arches:** For anchorage and stability
 - **Acrylic Matrix:** Usually placed on anterior teeth for alignment and/or stability.
 - **Sweep Springs:** Commonly placed on expansion appliances when anterior crowding exists.
 - **Memory Expansion Screw Adjustment Key:** When placed in the adjustment slot and pushed in the direction of the arrow, it allows for ¼ millimeter expansion. Note: the Inman Power Component also has it’s own unique Adjustment Key

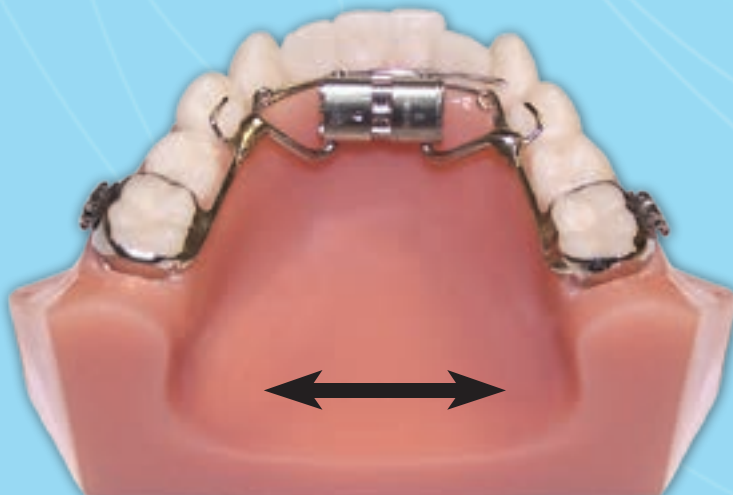


Cut-away view showing the interior coil assembly of the unique Memory Expansion Screws.

The MemRx E appliances feature lateral expansion via unique Memory Expansion Screws. The special Memory Screw allows for multiple adjustments to be made at the time of seating the appliance. Expansion is achieved thanks to the Memory Springs, which are integrated in the screw. This serves to increase patient comfort and compliance as well as less chair time in the doctor's office, not to mention fewer patient appointments.



If the Doctor wishes, palatal acrylic can be added to provide stability and consistent pressure across the arch. At left is an example of the range of expansion possible with Memory Expansion Screws.



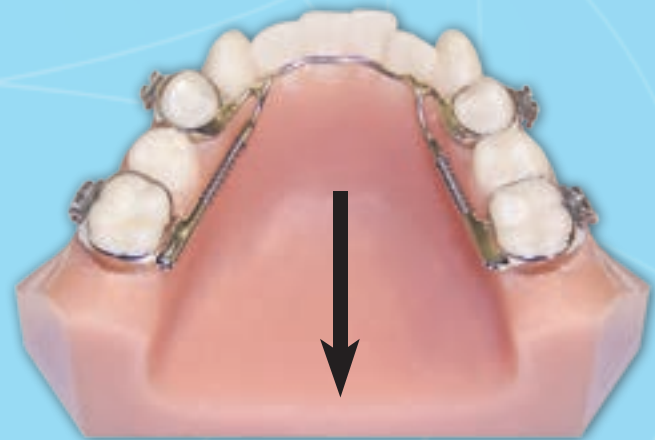
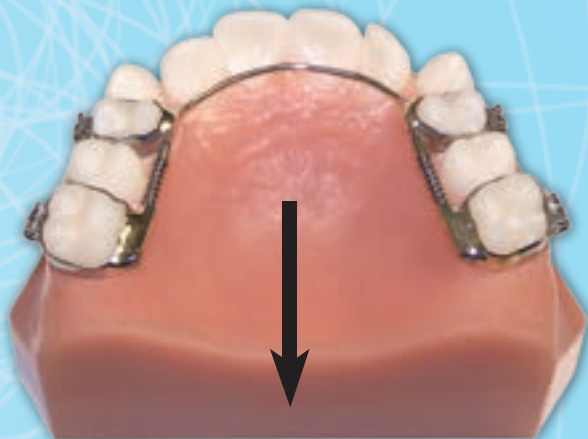
The MemRx E appliances, available in both upper and lower arch configurations, require no acrylic in the mouth. The lower design consists of a wire framework and utilizes a comfortable stainless steel memory screw for expansion.

The MemRx E appliances can be used in conjunction with any Straight Wire mechanics. Buccal tubes added to the molar bands will accept any .022 or .018 size arch wire. Additionally, lingual anterior springs can be added to these appliances to aid in aligning crowded anterior teeth.

The MemRx D is designed to increase arch length by moving posterior teeth distally. Anchorage is achieved by connecting the first bicuspid together via an anterior lingual arch. A Nance button may be used in addition to, or instead of, the anterior lingual arch if sufficient anterior teeth are not present to anchor the appliance.

Distalization of the molars is accomplished by compressing the Nickel Titanium coil spring with the Inman Power Component (I.P.C.). Using the special adjustment tool, the I.P.C. can be moved in increments ranging from 1 millimeter to several millimeters, depending on the needs of the particular patient. However, once the clinician has had experience with the I.P.C., several millimeters of spring compression can be placed into the appliance at the initial seating. (See back cover for proper adjustment of MemRx appliances)

The MemRx D appliances can be used in conjunction with any Straight Wire mechanics. Buccal tubes added to the molar bands will accept any .022 or .018 size arch wire.



The appliance consists of the following:

- Molar bands with straight wire tubes and lingual I.P.C.s.
- First bicuspid bands.
- A lingual wire soldered to the bicuspid bands.
- I.P.C.s placed on lingual.
- Nickel Titanium Open-Coil spring placed over the I.P.C. slotted wire.
- I.P.C.s soldered to lingual of bicuspid bands.

Options:

- Optional Straight Wire molar tubes.
- Optional Straight Wire brackets.

Notes: _____

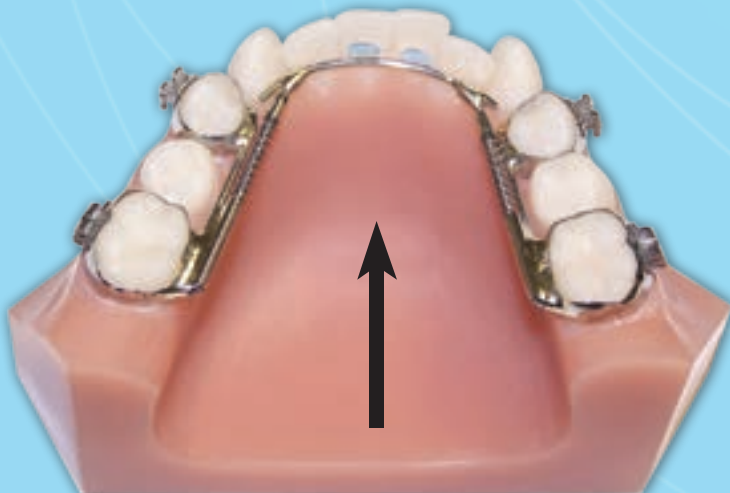
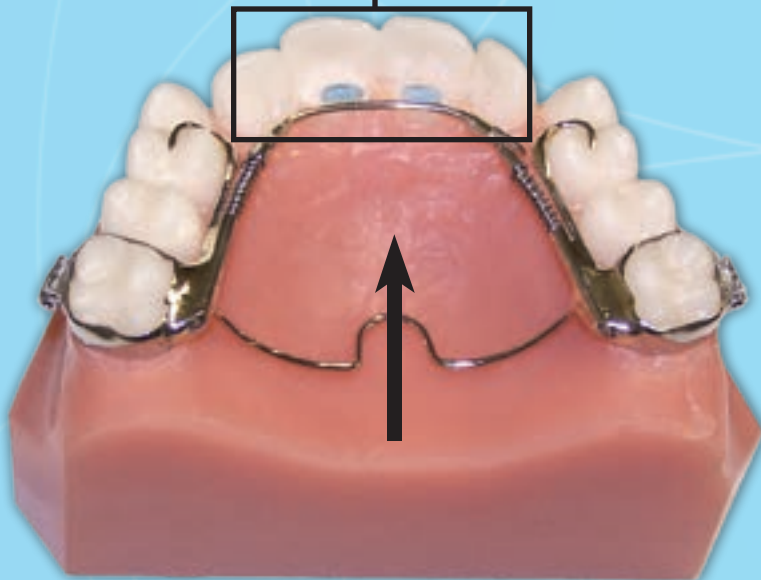
The MemRx A appliance is the ideal choice to use in cases where the anterior teeth need to be moved labially. It is especially useful when used in conjunction with Straight Wire mechanics. The sliding anterior wire rests at or below the cingulum of anterior teeth. Gentle spring forces from the Nickel Titanium coil springs encourage bodily movement of the anterior teeth. It is suggested that a ledge of composite be placed just incisal to the wire to inhibit any incisal deflection that may occur once spring pressure is applied. Anchorage is achieved by using bands on the 6-year molars and first bicuspid. Parallel path of insertion between molars and bicuspid must exist for the appliance to fit properly. If no proper path of insertion exists, clasps or bonded mesial occlusal rests may be used.

The appliance consists of the following:

- Molar bands.
- First bicuspid bands, clasps or mesial rests. (Note: Proper path of insertion must be present if bicuspid bands are prescribed.)
- A lingual connecting wire soldered between the molar and bicuspid bands.
- A transpalatal arch wire with adjustment loop in the palate soldered to the lingual of the molar bands.
- A soldered guide tube that is attached to and runs parallel with the connecting wire.
- A lingual arch I.P.C. (Inman Power Component) runs through the guide tubes.
- Nickel Titanium Open-Coil spring placed over the I.P.C. slotted wire.

Options:

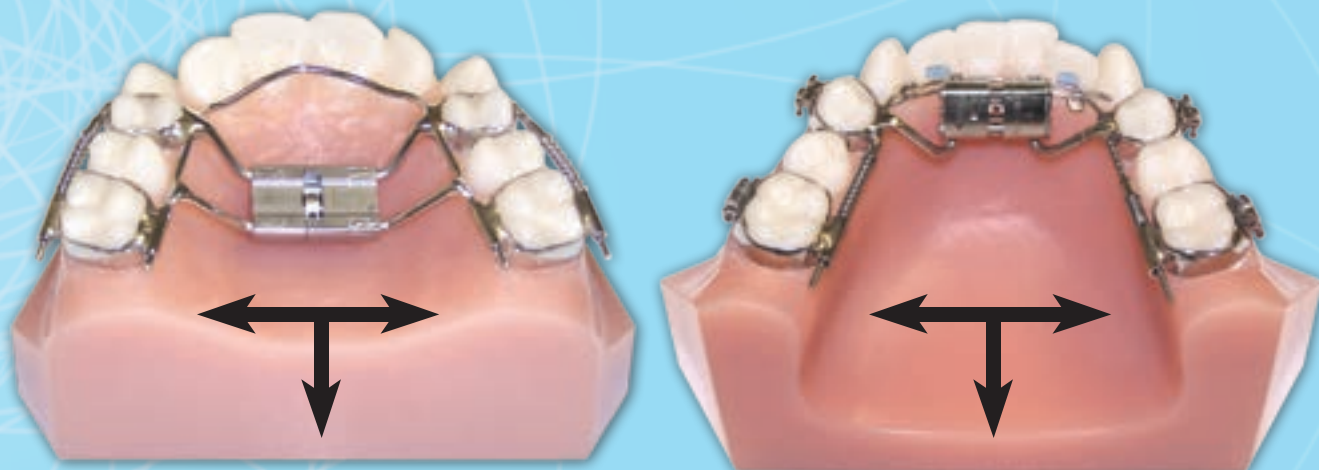
- Optional Straight Wire molar tubes.
- Optional Straight Wire brackets.
- Stops may be added to the lingual I.P.C. to engage the laterals if extra retention of the lingual wire is necessary. Composite ledges placed incisal to the wire will keep it from riding up the cingulum upon activation of the I.P.C.
- A labial bow may be soldered to the buccal of the bicuspid bands or clasps, if needed, to control the movement of the anteriors.



The MemRx ED is for lateral development of either arch and distalizing molars. It is an especially good choice when treating crowded arches that lack enough anterior/posterior length. Lateral development is achieved by the use of the Memory Expansion Screw. Proper AP is achieved by distalizing the molars via the NiTi open coil springs which are activated by the Inman Power Component.

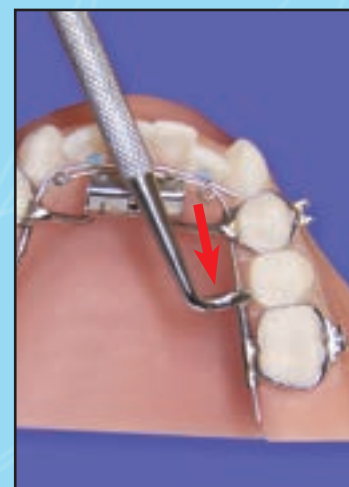
Once the appliance is cemented into the mouth, the screw may be adjusted 5-6 turns immediately. This will load the internal Niti open coil springs. Expansion is expressed in a gentle, more consistent manner than traditional RPE screws.

Distalization of the molars is accomplished by compressing the Nickel Titanium coil spring with the Inman Power Component (I.P.C.). Using the special adjustment tool, the I.P.C. can be moved in increments ranging from 1 millimeter to several millimeters depending on the needs of the particular patient. However, once the clinician has had experience with the I.P.C., several millimeters of spring compression can be placed into the appliance at the initial seating. (see back cover for proper adjustment of MemRx appliances)



The appliance consists of the following:

- Molar bands with soldered buccal and lingual guide tubes
- First bicuspid bands
- A lingual wire soldered to the bicuspid bands and extending from the midline back through the lingual soldered tube on the molar band.
- Memory RPE screw -10 millimeter standard for upper arch. 8 millimeter standard for lower arch.
- I.P.C. (Inman Power Component) soldered to the buccal or lingual of the bicuspid bands and extending distally through the soldered buccal or lingual tube on the first molar band.
- NiTi open coil spring placed over the I.P.C. slotted wire.



Options:

- In cases where a patient's flared lower anterior teeth need to be controlled or corrected, a labial bow may be added.
- Lingual lapping springs may be added to help align crowded anteriors.
- Can be used with any Straight Wire technique.

When it is necessary to treat a crowded upper or lower arch, the MemRx EA is the appliance of choice. It has a Memory Expansion Screw for lateral development as well as NiTi open coil springs that are activated by the Inman Power Component (I.P.C.) for labial movement of the anterior teeth.

Once the appliance is cemented into the mouth, the Memory Screw may be adjusted 5-6 turns immediately. This will load the internal NiTi open coil springs. Expansion is expressed in a gentle, more consistent manner than traditional RPE screws. (Memory Screw adjustment photographs below)

The sliding anterior wire rests at or below the cingulum of anterior teeth. Gentle spring forces from the NiTi open coil springs encourage bodily movement of the anterior teeth. Note: It is suggested that a ledge of composite be placed just incisal to the sliding anterior wire to inhibit any incisal deflection that may occur once spring pressure is applied (see photo below).

Anchorage is achieved by using bands on the 6-year molars and first bicuspid. Note that parallel path of insertion between molars and bicuspid must exist for the appliance to fit properly. If no proper path of insertion exists, clasps or bonded mesial occlusal rests may be used.



The appliance consists of the following:

- Molar bands.
- First bicuspid bands, clasps or bonded occlusal rests
- A lingual connecting wire soldered to the molar and bicuspid bands
- Memory RPE screw—8 or 10 millimeter soldered to the lingual of the molar and bicuspid band.
- A soldered guide tube that is attached to and runs parallel with the connecting wire.
- A lingual arch I.P.C. (Inman Power Component) runs through the guide tubes.
- Nickel Titanium Open-Coil spring placed over the I.P.C. slotted wire.



Options:

- Optional Straight Wire molar tubes.
- Optional Straight Wire brackets.
- Stops distal to laterals may be added to the I.P.C. Advancing Wire for added retention if necessary. Composite ledges placed incisal to the wire will keep it from riding up the cingulum upon activation of the I.P.C.
- A labial bow may be soldered to the buccal of the bicuspid bands if needed to control the movement of the anteriors

This appliance utilizes the Nickel Titanium Memory Screw for lateral development along with Herbst Hinges. This appliance is excellent for correction of skeletal class II malocclusions. Proper construction of this appliance requires a preset construction bite showing the patient in the corrected (Class I) position.

The effectiveness of this appliance, as well as with all Herbst designs, is enhanced if the transverse deficiencies are addressed first. This is especially true in cases where severe constriction of the dental arches exists. However, if both Class II and lateral deficiencies must be corrected simultaneously, the MemRx EH is a good appliance choice where fixed treatment is preferred.

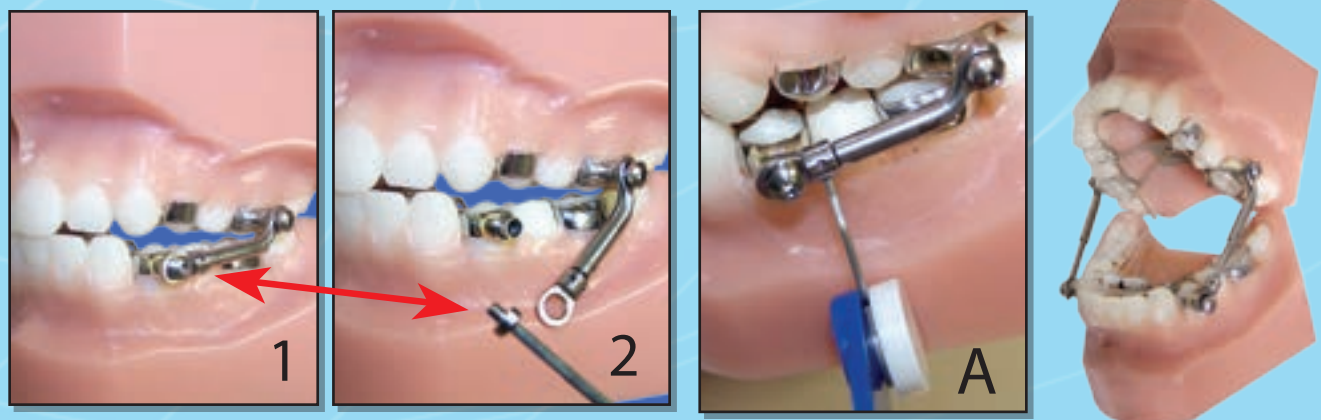
The appliance must be inserted as two pieces. Using the allen wrench provided, detach the lower hinge assembly from the bicuspid band pivot by unscrewing the allen screw (see photo examples below). Cement the upper portion of the appliance into the Maxillary arch. Next, cement the lower portion into the Mandibular arch. Once both portions of the appliance are cemented into the mouth, re-connect the lower hinge assembly by replacing the Allen screw into the bicuspid pivot.

Once the appliance is cemented into the mouth, the expansion screw may be adjusted 5-6 turns immediately. This will load the internal NiTi coil springs. Expansion is expressed in a gentle, more consistent manner than traditional RPE screws. A single screw can expand up to 10 millimeters. In cases where severe constriction exists, an additional appliance may be necessary.

The Herbst Hinge may be adjusted by inserting the supplied adjustment key into one of the four holes in the adjustment collar located at the end of the hinge. (adjustment is shown in figure A below) Advance the key in the direction indicated on the collar. Advancing the key toward the plus (+) sign will advance the mandible ¼ millimeter at a time. Turning the key toward the minus (-) sign will retrude the mandible ¼ millimeter at a time.

This appliance consists of the following:

- Molar bands
- Bicuspid bands
- Soldered lingual arch wires
- Adjustable Herbst Hinges Note: Standard sleeved Herbst Hinge available upon request.
- Memory Expansion Screw(s)
 - o In cases of extreme arch constriction, a smaller 8-millimeter screw may be substituted for Phase I treatment.
 - o Lower arch expansion uses 8-millimeter screw standard.



This appliance is mainly used to treat extreme flaring of anterior teeth. It can be applied to correct an anterior open bite caused by biprotrusive flaring of anterior teeth. It can also be used to retract anterior segments and close open spaces in cases of bicuspid extraction.

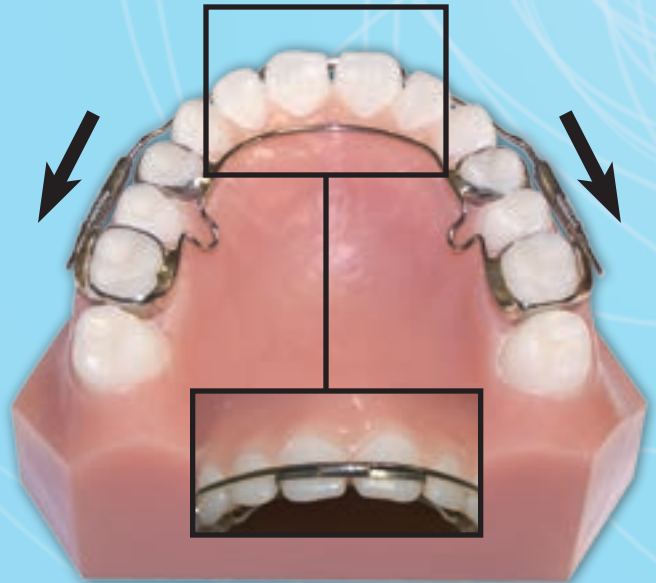
The appliance consists of bands on 1st or 2nd molars and bands on 1st or 2nd bicuspid. Anchorage is achieved by connecting the bands to a soldered lingual arch. The lingual arch wire is strategically placed so as to allow for retraction of the flared anterior teeth. Retraction is achieved by an active labial arch wire using an integrated Inman Power Component (I.P.C.).

When compressed by the I.P.C. sliding collar, the NiTi coil springs, placed distal to the molar tubes, provide an even and consistent retraction force. In cases of severely flared anterior teeth, a labial acrylic matrix of the anterior teeth, or an auxiliary clasp wire, can be placed on the labial arch wire for more stability.

Parallel path of insertion between molars and bicuspid must exist for the appliance to fit properly. If no proper path of insertion exists, clasps or bonded mesial occlusal rests may be used.

The appliance is cemented into the mouth as one unit. NOTE: Do not activate the I.P.C. modules before cementation of the appliance.

Activate the I.P.C. / NiTi coil springs by using the specialized adjustment tool sent with the appliance. Place the slotted portion of the tool to engage the adjustment collar and push the tool and collar in the direction that will compress the NiTi coil spring. EXAMPLE: On the labial I.P.C. you will push the tool and collar mesially towards the anteriors.

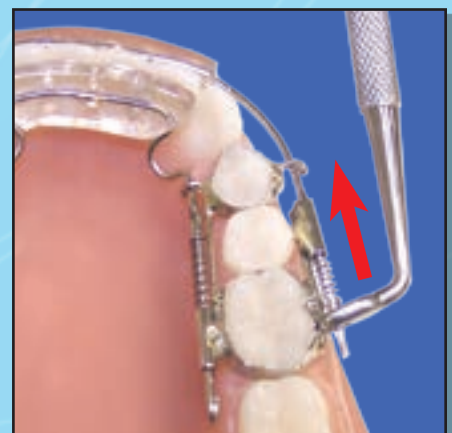
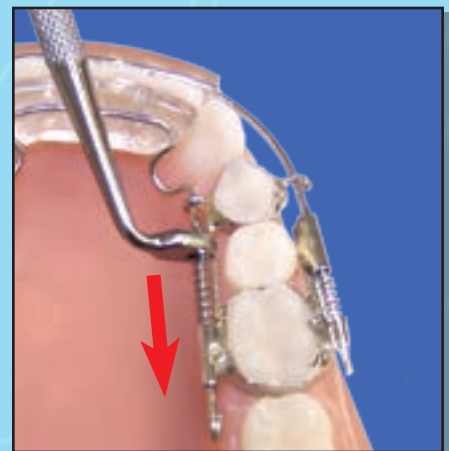
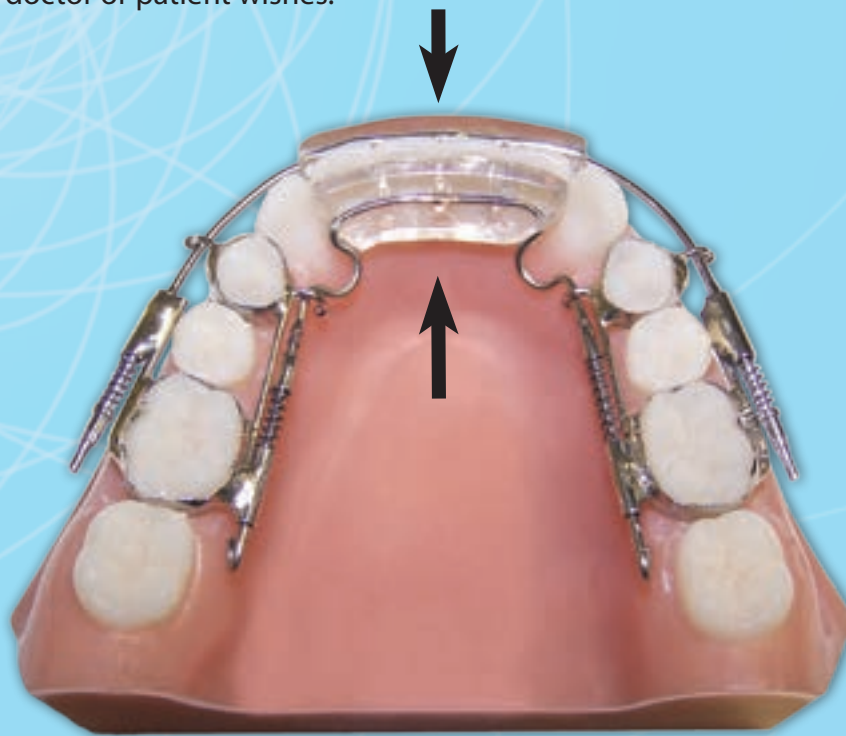


This appliance is useful in correction of minor rotation and crowding up to 1.5 millimeters from cuspid to cuspid in the anteriors. The space necessary to correct this crowding is gained by judicious interproximal re-contouring in the anterior region only, as the appliance is not designed to gain any arch width or length.

Before fabricating the appliance, the lab will separate the rotated and crowded anteriors from the stone cast and will reset them in ideal alignment. A labial and lingual acrylic matrix of the newly positioned anterior teeth is formed on the active wires of the appliance. The appliance is then fabricated to this corrected anterior position and sent back to you for delivery. On the day of delivery, complete the necessary interproximal re-contouring, and then seat the appliance. NOTE: Do not activate the I.P.C. modules before cementation of the appliance.

Activate the I.P.C. / NiTi coils by using the specialized adjustment tool sent with the appliance. Place the slotted portion of the tool to engage the adjustment collar and push the tool and collar in the direction that will compress the NiTi coil spring. EXAMPLE: On the lingual I.P.C. you will push the tool and the collar distally towards the molars. On the labial I.P.C. you will push the tool and collar mesially towards the anteriors. (both are pictured at below right)

As this is a fixed, cemented appliance, the forces generated by activation of the I.P.C. / NiTi coil springs will immediately and consistently start aligning the malpositioned anterior teeth. Correction will be achieved in a short time. However, the patient should remain in the appliance for a period of time after alignment has been achieved for stability. A bonded retainer can be seated at a later time if the doctor or patient wishes.



Notes: _____

Proper Adjustment of MemRx Appliances



Memory Expansion Screw: Place the swivel adjustment key into the hole located opposite the tip of the directional arrow. Push the handle of the key in the direction of the arrow until it fully stops. This will compress the internal NiTi coil springs contained within the body of the screw. 5-6 adjustments will compress the springs completely and can be placed into the screw memory immediately after successful cementation of appliance. Subsequent adjustments can be placed into screw memory as needed.



Inman Power Component (I.P.C.) and Activation Tool: Place the slotted portion of the tool to engage the adjustment collar and push the tool and collar in the direction that will compress the NiTi coil spring. As the collar moves down the I.P.C. wire, it will “click.” Each “click” is equal to 1 millimeter of compression. Full compression of the coil spring will generate the most force whereas partial compression of the coil spring will generate less force. Note: Flowable composite may be placed on the coil spring to neutralize pressure when teeth have moved to desired position.



“C” Clasps: These may take the place of bicuspid bands when no proper path of insertion or partially erupted bicuspids exists. A buccal bonded ledge placed just occlusal to the clasp will aid in retention.



Bonded Occlusal Rests: These may take the place of bicuspid bands when no proper path of insertion exists or when the doctor requests only two bands. These can be bonded to the occlusal surface of the bicuspids to aid in retention of the appliance.



Composite Bonded Ledges: Bonded ledges as shown, assist in keeping the I.P.C. Advancing wire and Sweep Springs in place once spring pressure is applied. Place a ledge just incisal to the wire to keep it from riding up the incline of the cingulum.



Sweep Springs: Commonly placed on expansion appliances when anterior crowding exists. Can be adjusted in the mouth by using angled bird beak pliers to open the helical coils. A composite ledge placed just incisal to the springs will aid in retention.



Adjustable Herbst Hinge: May be adjusted by inserting the adjustment key into one of the four holes in the adjustment collar located at the end of the hinge. Advance the key in the direction indicated on the collar. Advancing the key toward the plus (+) sign will advance the mandible ¼ millimeter at a time. Turning the key toward the minus (-) sign will retrude the mandible ¼ millimeter at a time.



Acrylic Matrix: This is usually placed on the anterior wire to assist in retention or alignment of anterior teeth. Adjust to accommodate any bite interference. This is not recommended for deep bite cases.

NOTICE TO DOCTOR: DO NOT ACTIVATE COIL SPRINGS UNTIL APPLIANCE HAS BEEN CEMENTED! To allow for easier placement, these MemRx appliances have been left passive with no coil spring activation. The following helpful tips will aid you with inserting and successfully using the MemRx system of appliances.

- Activate the coil spring only after cementing the appliance.
- A composite ledge(s) is highly recommended for keeping the anterior wire from riding up the lingual side of anterior teeth.
- Use the specially designed adjustment tool to push the I.P.C. sliding collar toward the coil spring. Each “click” is 1 millimeter. More clicks = more pressure.

If Memory Expansion Screw is present, it can be adjusted 3-5 turns at each appointment.



For more info call **800-423-3270** or log onto **www.SMLglobal.com**

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